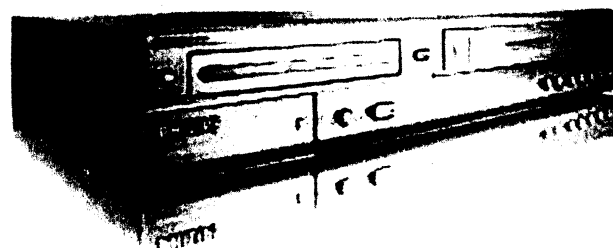


Service  
Service  
Service



# Service Manual

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Published by LG-KC 0520 AV System Printed in The Netherlands Subject to modification



3139 785 31130

Version 1.0



# PHILIPS

# SECTION 1

## SUMMARY

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## PRODUCT SAFETY SERVICING GUIDELINES FOR VIDEO PRODUCTS

### IMPORTANT SAFETY NOTICE

This manual was prepared for use only by properly trained audio-video service technicians.

When servicing this product, under no circumstances should the original design be modified or altered without permission from PHILIPS Electronics Corporation. All components should be replaced only with types identical to those in the original circuit and their physical location, wiring and lead dress must conform to original layout upon completion of repairs.

Special components are also used to prevent x-radiation, shock and fire hazard. These components are indicated by the letter "X" included in their component designators and are required to maintain safe performance. No deviations are allowed without prior approval by PHILIPS Electronics Corporation.

Circuit diagrams may occasionally differ from the actual circuit used. This way, implementation of the latest safety and performance improvement changes into the set is not delayed until the new service literature is printed.

**CAUTION:** Do not attempt to modify this product in any way. Never perform customized installations without manufacturer's approval. Unauthorized modifications will not only void the warranty, but may lead to property damage or user injury.

Service work should be performed only after you are thoroughly familiar with these safety checks and servicing guidelines.

### GRAPHIC SYMBOLS



The exclamation point within an equilateral triangle is intended to alert the service personnel to important safety information in the service literature.



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the service personnel to the presence of noninsulated "dangerous voltage" that may be of sufficient magnitude to constitute a risk of electric shock.



The pictorial representation of a fuse and its rating within an equilateral triangle is intended to convey to the service personnel the following fuse replacement caution notice:

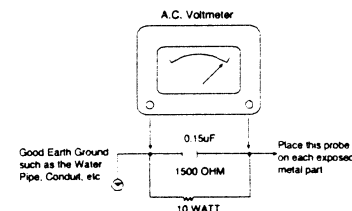
**CAUTION:** FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ALL FUSES WITH THE SAME TYPE AND RATING AS MARKED NEAR EACH FUSE.

### SERVICE INFORMATION

While servicing, use an isolation transformer for protection from AC line shock. After the original service problem has been corrected, make a check of the following:

### FIRE AND SHOCK HAZARD

1. Be sure that all components are positioned to avoid a possibility of adjacent component shorts. This is especially important on items transported to and from the repair shop.
2. Verify that all protective devices such as insulators, barriers, covers, shields, strain reliefs, power supply cords, and other hardware have been reinstalled per the original design. Be sure that the safety purpose of the polarized line plug has not been defeated.
3. Soldering must be inspected to discover possible cold solder joints, solder splashes, or sharp solder points. Be certain to remove all loose foreign particles.
4. Check for physical evidence of damage or deterioration to parts and components, for frayed leads or damaged insulation (including the AC cord), and replace if necessary.
5. No lead or component should touch a high current device or a resistor rated at 1 watt or more. Lead tension around protruding metal surfaces must be avoided.
6. After reassembly of the set, always perform an AC leakage test on all exposed metallic parts of the cabinet (the channel selector knobs, antenna terminals, handle and screws) to be sure that set is safe to operate without danger of electrical shock. **DO NOT USE A LINE ISOLATION TRANSFORMER DURING THIS TEST.** Use an AC voltmeter having 5000 ohms per volt or more sensitivity in the following manner: Connect a 1500 ohm, 10 watt resistor, paralleled by a .15 mfd 150V AC type capacitor between a known good earth ground water pipe, conduit, etc.) and the exposed metallic parts, one at a time. Measure the AC voltage across the combination of 1500 ohm resistor and .15 mfd capacitor. Reverse the AC plug by using a non-polarized adaptor and repeat AC voltage measurements for each exposed metallic part. Voltage measured must not exceed 0.75 volts RMS. This corresponds to 0.5 milliamp AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.



### TIPS ON PROPER INSTALLATION

1. Never install any receiver in a closed-in recess, cubbyhole, or closely fitting shelf space over, or close to, a heat duct, or in the path of heated air flow.
2. Avoid conditions of high humidity such as: outdoor patio installations where dew is a factor, near steam radiators where steam leakage is a factor, etc.
3. Avoid placement where draperies may obstruct venting. The customer should also avoid the use of decorative scarves or other coverings that might obstruct ventilation.
4. Wall- and shelf-mounted installations using a commercial mounting kit must follow the factory-approved mounting instructions. A product mounted to a shelf or platform must retain its original feet (or the equivalent thickness in spacers) to provide adequate air flow across the bottom. Bolts or screws used for fasteners must not touch any parts or wiring. Perform leakage tests on customized installations.
5. Caution customers against mounting a product on a sloping shelf or in a tilted position, unless the receiver is properly secured.
6. A product on a roll-about cart should be stable in its mounting to the cart. Caution the customer on the hazards of trying to roll a cart with small casters across thresholds or deep pile carpets.
7. Caution customers against using extension cords. Explain that a forest of extensions, sprouting from a single outlet, can lead to disastrous consequences to home and family.

## SERVICING PRECAUTIONS

**CAUTION:** Before servicing the VCR + DVD RECORDER covered by this service data and its supplements and addends, read and follow the **SAFETY PRECAUTIONS**. NOTE: if unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions in this publications, always follow the safety precautions.

Remember Safety First:

### General Servicing Precautions

1. Always unplug the VCR + DVD RECORDER AC power cord from the AC power source before:

- (1) Removing or reinstalling any component, circuit board, module, or any other assembly.
- (2) Disconnecting or reconnecting any internal electrical plug or other electrical connection.
- (3) Connecting a test substitute in parallel with an electrolytic capacitor.

**Caution:** A wrong part substitution or incorrect polarity installation of electrolytic capacitors may result in an explosion hazard.

2. Do not spray chemicals on or near this VCR + DVD RECORDER or any of its assemblies.

3. Unless specified otherwise in this service data, clean electrical contacts by applying an appropriate contact cleaning solution to the contacts with a pipe cleaner, cotton-tipped swab, or comparable soft applicator. Unless specified otherwise in this service data, lubrication of contacts is not required.

4. Do not defeat any plug/socket B+ voltage interlocks with which instruments covered by this service manual might be equipped.

5. Do not apply AC power to this VCR + DVD RECORDER and / or any of its electrical assemblies unless all solid-state device heat sinks are correctly installed.

6. Always connect the test instrument ground lead to an appropriate ground before connecting the test instrument positive lead. Always remove the test instrument ground lead last.

### Insulation Checking Procedure

Disconnect the attachment plug from the AC outlet and turn the power on. Connect an insulation resistance meter (500V) to the blades of the attachment plug. The insulation resistance between each blade of the attachment plug and accessible conductive parts (Note 1) should be more than 1M-ohm.

**Note 1:** Accessible Conductive Parts include Metal panels, input terminals, Earphone jacks, etc.

### Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field effect transistors and semiconductor chip components.

The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.

2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.

3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.

4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ES devices.

5. Do not use freon-propelled chemicals. These can generate an electrical charge sufficient to damage ES devices.

6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil, or comparable conductive material).

7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

**Caution:** Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Normally harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device.)

## INFORMATION ABOUT LEAD-FREE SOLDERING

Philips CE is producing lead-free sets from 1.1.2005 onwards.

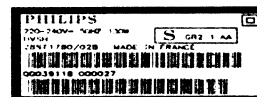
### IDENTIFICATION:

Regardless of special logo (not always indicated)



one must treat all sets from 1 Jan 2005 onwards, according next rules:

Example S/N:



Bottom line of typeplate gives a 14-digit S/N. Digit 5&6 is the year, digit 7&8 is the week number, so in this case 1991 wk 18

So from 0501 onwards = from 1 Jan 2005 onwards

**Important note:** In fact also products of year 2004 must be treated in this way as long as you avoid mixing solder-alloys (lead-ed / lead-free). So best to always use SAC305 and the higher temperatures belong to this.

Due to lead-free technology some rules have to be respected by the workshop during a repair:

- Use only lead-free solder alloy Philips SAC305 with order code 0622 149 00106. If lead-free solder-paste is required, please contact the manufacturer of your solder-equipment. In general use of solder-paste within workshops should be avoided because paste is not easy to store and to handle.
- Use only adequate solder tools applicable for lead-free solder alloy. The solder tool must be able
  - \* To reach at least a solder-temperature of 400°C,
  - \* To stabilize the adjusted temperature at the solder-tip
  - \* To exchange solder-tips for different applications.
- Adjust your solder tool so that a temperature around 360°C – 380°C is reached and stabilized at the solder joint. Heating-time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400°C otherwise wear-out of tips will rise drastically and flux-fluid will be destroyed. To avoid wear-out of tips switch off un-used equipment, or reduce heat.
- Mix of lead-free solder alloy / parts with lead-ed solder alloy / parts is possible but PHILIPS recommends strongly to avoid mixed solder alloy types (lead-ed and lead-free). If one cannot avoid or does not know whether product is lead-free, clean carefully the solder-joint from old solder alloy and re-solder with new solder alloy (SAC305).
- Use only original spare-parts listed in the Service-Manuals. Not listed standard-material (commodities) has to be purchased at external companies.
- **Special information for BGA-ICs:**
  - always use the 12nc-recognizable soldering temperature profile of the specific BGA (for de-soldering always use the lead-free temperature profile, in case of doubt)
  - lead free BGA-ICs will be delivered in so-called 'dry-packaging' (sealed pack including a silica gel pack) to protect the IC against moisture. After opening, dependent of MSL-level seen on indicator-label in the bag, the BGA-IC possibly still has to be baked dry. (MSL=Moisture Sensitivity Level). This will be communicated via AYS-website.

Do not re-use BGAs at all.

• For sets produced before 1.1.2005 (except products of 2004), containing lead-ed solder-alloy and components, all needed spare-parts will be available till the end of the service-period. For repair of such sets nothing changes.

• On our website [www.atyourservice.ce.philips.com](http://www.atyourservice.ce.philips.com) you find more information to:

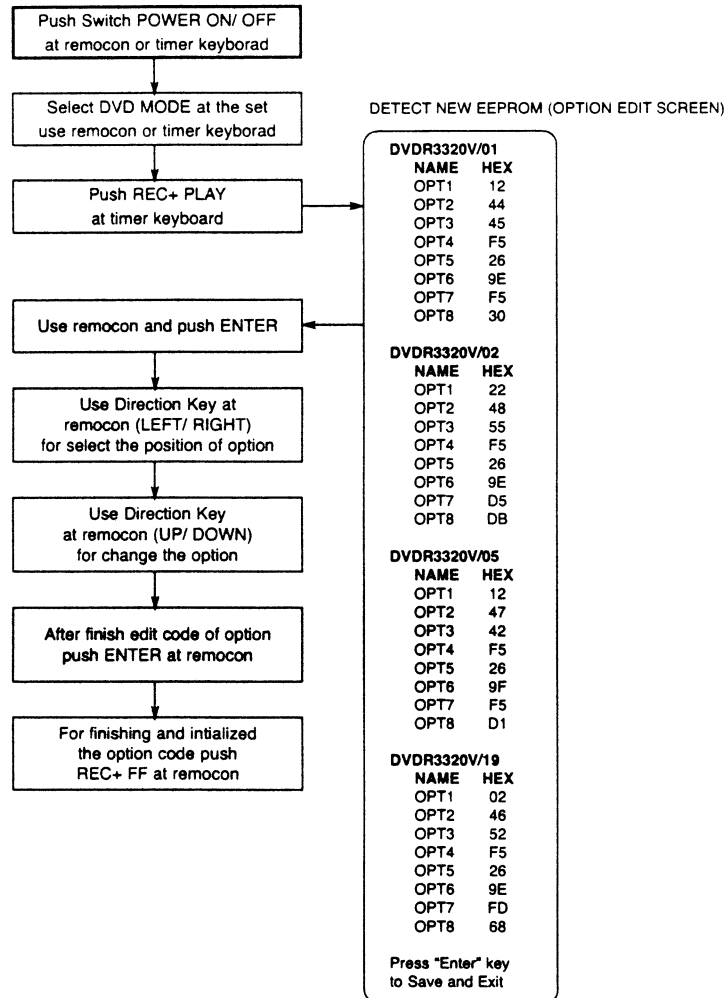
- \* BGA-de/soldering (+ baking instructions)
- \* Heating-profiles of BGAs and other ICs used in Philips-sets

You will find this and more technical information within the "magazine", chapter "workshop news".

For additional questions please contact your local repair-helpdesk.

## THE STEPS FOR CHANGE THE OPTION CODE

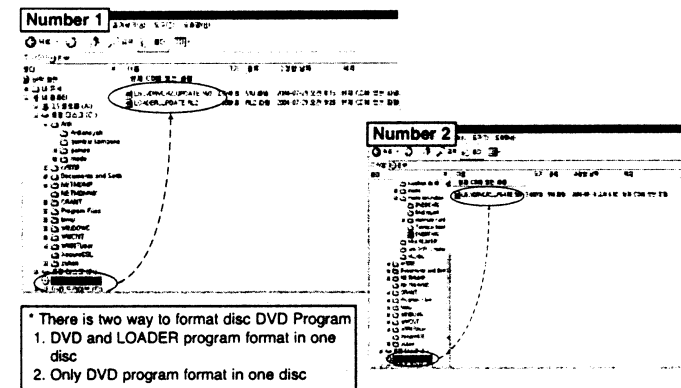
**Note :** This procedure must be done when IC304(On digital Board) or Digital Boardassy



## UP-DATING PROGRAM

### BURNING DISC

- For up-dating the DVD program using the disc, it must burning the disc which include the DVD software.
- For recorder combi set which using the disc downloader program are DVD Program and Loader Program.
- In 2nd generation for recorder combi can download the DVD program and Loader program one by one, or all together.



- If you format like number 1 you'll see capture like (figure 1)
- And you have three choice:  
1. Main. It's mean if you chose this it'll up-dating only DVD program.  
2. Loader. It's mean if you chose this it'll up-dating only Loader program.  
3. ALL. It's mean if you chose this it'll up-dating DVD and Loader program.



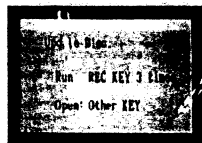
- If you format like number 2 you'll not see capture like figure 1 that give you choices, you have no choice only update DVD program



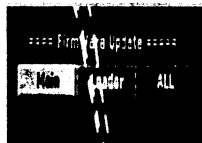
## DVD UPGRADE INSTRUCTION

### FORMAT NO 1

1. Press POWER KEY to turn on.
2. After booting, insert the upgrade disc, and you will see message like [FIGURE 1]
3. Press "REC" key (front or remote) 3 times and you will see as [FIGURE 2] with remote Chose one of them then Press enter
4. For update both of them [MAIN & LOADER] we chose "ALL" and first you will see [FIGURE 3] DVD update  
→ Check the "Current Version" and "New CD Write Version" and press "REC" key.
5. The DVD update will be on progress. And when finish update MAIN Version it's automatically continue to Update Loader Version and You will see [FIGURE 4]  
→ Check the "Current Version" and "New CD Write Version " and Press "REC" key once more
6. The LOADER update will be on progress. And tray will open.
7. Remove the disc and wait until finish
8. The tray will be close and open automatically after completing "UNDER UPDATE" 100%
9. Turn off the unit
10. Turn on again the unit is operation with new software



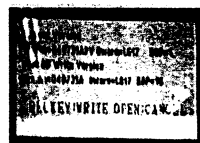
[FIGURE 1]



[FIGURE 2]



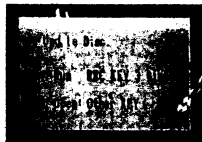
[FIGURE 3]



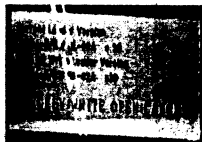
[FIGURE 4]

### FORMAT NO 2

1. Press POWER KEY to turn on.
2. After booting, insert the upgrade disc, and you will see message like [FIGURE 1]
3. Press "REC" key (front or remote) 3 times
4. The DVD update will be on progress.  
→ Check the "Current Version" and "New CD Write Version " and Press "REC" key once more
5. The tray will be open automatically after completing "UNDER UPDATE" 100%
6. Remove the disc and Turn off the unit
7. Turn on again the unit is operation with new software



[FIGURE 1]



[FIGURE 2]

## SPECIFICATIONS

### General

Power requirements	AC 220-230V, 50 Hz
Power consumption	35W
Dimensions (approx.)	430 X 78.5 X 354 mm (w x h x d)
Mass (approx.)	5.7 kg
Operating temperature	5°C to 35°C
Operating humidity	5 % to 90 %
Television system	PAL B/G, PAL I/I, SECAM D/K color system
Recording format	PAL

### System

Laser	Semiconductor laser, wavelength 650 nm
Video head system	Double azimuth 4 heads, helical scanning
Signal system	PAL

### Recording

Recording format	DVD+RW/+R Video format
Recordable discs	DVD-ReWritable, DVD-Recordable, DVD+ReWritable, DVD+Recordable
Recordable time	Approx. 1 hour (XP mode), 2 hours (SP mode), 4 hours (LP mode), 6 hours (EP mode)

### Video recording format

Sampling frequency	27MHz
Compression format	MPEG 2

### Audio recording format

Sampling frequency	48kHz
Compression format	Dolby Digital

### Playback

Frequency response	DVD (PCM 48 kHz): 8 Hz to 22 kHz, CD: 8 Hz to 20 kHz DVD (PCM 96 kHz): 8 Hz to 44 kHz
--------------------	------------------------------------------------------------------------------------------

### Harmonic distortion

Dynamic range	Less than 0.008% (AUDIO OUT connector) More than 95 dB (AUDIO OUT connector)
---------------	---------------------------------------------------------------------------------

### Inputs

AERIAL IN	Aerial input, 75 ohms
VIDEO IN	1.0 Vp-p 75 ohms, sync negative, RCA jack x 1 / SCART x 2
AUDIO IN	0 dBm more than 47 kohms, RCA jack (L, R) x 1 / SCART x 2
DV IN	4 pin (i.LINK/IEEE 1394 standard)
S-VIDEO IN	(Y) 1.0 V (p-p), 75 Ω, negative sync, Mini DIN 4-pin x 1 (C) 0.3 V (p-p) 75 Ω

### Outputs

S-VIDEO OUT	(Y) 1.0 V (p-p), 75 Ω, negative sync, Mini DIN 4-pin x 1 (C) 0.3 V (p-p) 75 Ω
COMPONENT VIDEO OUT	(Y) 1.0 V (p-p), 75 Ω, negative sync, RCA jack x 1 (Pb)/(Pr) 0.7 V (p-p), 75 Ω, RCA jack x 2
Audio output (digital audio)	0.5 V (p-p), 75 Ω, RCA jack x 1
Audio output (analog audio)	2.0 Vrms (1 KHz, 0 dB), 600 Ω, RCA jack (L, R) x 1 / SCART

\* Design and specifications are subject to change without notice.

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\* DTS and DTS Digital Out are registered trademarks of Digital Theater Systems, Inc.

**SECTION 2**  
**EXPLODED VIEWS**

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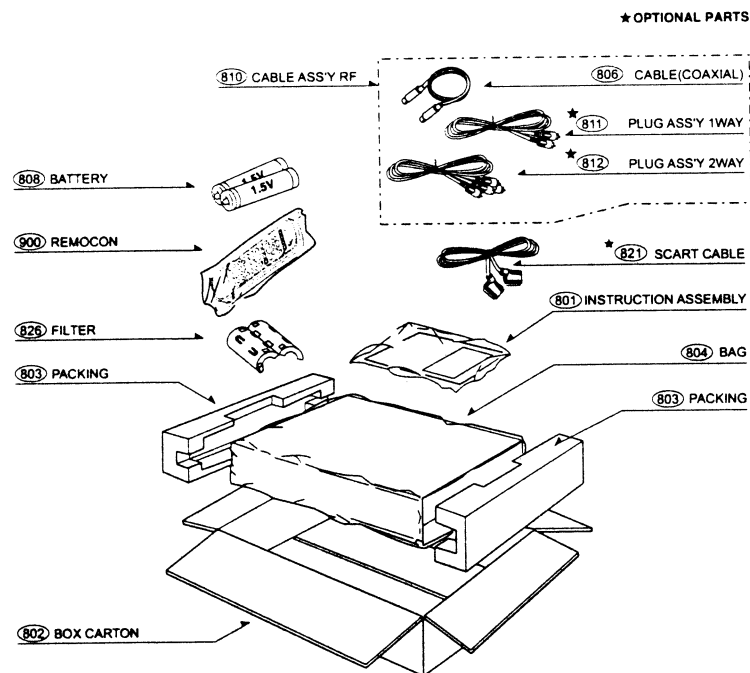
## 1. Cabinet and Main Frame Section



This exploded view diagram illustrates the assembly of a mechanical device, likely a motor or actuator. The components are labeled with numbers and letters in circles, and sub-assemblies are labeled with letters in rounded rectangles.

- Top Section:** Includes sub-assembly **A001** (containing parts 1001, 1002, 1003) and part **A60**. Below it is a rectangular frame (1005) with mounting points 1434.
- Motor/Actuator Core:** The central component (1026) features a circular opening. It is surrounded by a complex assembly of parts including 1025, 1027, 1029, 1030, 1032, 1033, 1038, and 1432.
- Internal Mechanism:** A detailed view of the internal components shows parts 1012, 1013, 1014, 1015, 1016, 1017, 1018A, 1018B, 1018C, 1018D, 1018E, 1019, 1020, 1024, 1035, 1036, 1037, 1038, 1039, 1040, 1041, 1042, 1043, 1044, 1045, 1046, 1047, 1048, 1049, 1050, 1051, 1052, 1053, 1054, 1055, 1056, 1057, 1058, 1059, 1060, 1061, 1062, 1063, 1064, 1065, 1066, 1067, 1068, 1069, 1070, 1071, 1072, 1073, 1074, 1075, 1076, 1077, 1078, 1079, 1080, 1081, 1082, 1083, 1084, 1085, 1086, 1087, 1088, 1089, 1090, 1091, 1092, 1093, 1094, 1095, 1096, 1097, 1098, 1099, 1100, 1101, 1102, 1103, 1104, 1105, 1106, 1107, 1108, 1109, 1110, 1111, 1112, 1113, 1114, 1115, 1116, 1117, 1118, 1119, 1120, 1121, 1122, 1123, 1124, 1125, 1126, 1127, 1128, 1129, 1130, 1131, 1132, 1133, 1134, 1135, 1136, 1137, 1138, 1139, 1140, 1141, 1142, 1143, 1144, 1145, 1146, 1147, 1148, 1149, 1150, 1151, 1152, 1153, 1154, 1155, 1156, 1157, 1158, 1159, 1160, 1161, 1162, 1163, 1164, 1165, 1166, 1167, 1168, 1169, 1170, 1171, 1172, 1173, 1174, 1175, 1176, 1177, 1178, 1179, 1180, 1181, 1182, 1183, 1184, 1185, 1186, 1187, 1188, 1189, 1190, 1191, 1192, 1193, 1194, 1195, 1196, 1197, 1198, 1199, 1200, 1201, 1202, 1203, 1204, 1205, 1206, 1207, 1208, 1209, 1210, 1211, 1212, 1213, 1214, 1215, 1216, 1217, 1218, 1219, 1220, 1221, 1222, 1223, 1224, 1225, 1226, 1227, 1228, 1229, 1230, 1231, 1232, 1233, 1234, 1235, 1236, 1237, 1238, 1239, 1240, 1241, 1242, 1243, 1244, 1245, 1246, 1247, 1248, 1249, 1250, 1251, 1252, 1253, 1254, 1255, 1256, 1257, 1258, 1259, 1260, 1261, 1262, 1263, 1264, 1265, 1266, 1267, 1268, 1269, 1270, 1271, 1272, 1273, 1274, 1275, 1276, 1277, 1278, 1279, 1280, 1281, 1282, 1283, 1284, 1285, 1286, 1287, 1288, 1289, 1290, 1291, 1292, 1293, 1294, 1295, 1296, 1297, 1298, 1299, 1300, 1301, 1302, 1303, 1304, 1305, 1306, 1307, 1308, 1309, 1310, 1311, 1312, 1313, 1314, 1315, 1316, 1317, 1318, 1319, 1320, 1321, 1322, 1323, 1324, 1325, 1326, 1327, 1328, 1329, 1330, 1331, 1332, 1333, 1334, 1335, 1336, 1337, 1338, 1339, 1340, 1341, 1342, 1343, 1344, 1345, 1346, 1347, 1348, 1349, 1350, 1351, 1352, 1353, 1354, 1355, 1356, 1357, 1358, 1359, 1360, 1361, 1362, 1363, 1364, 1365, 1366, 1367, 1368, 1369, 1370, 1371, 1372, 1373, 1374, 1375, 1376, 1377, 1378, 1379, 1380, 1381, 1382, 1383, 1384, 1385, 1386, 1387, 1388, 1389, 1390, 1391, 1392, 1393, 1394, 1395, 1396, 1397, 1398, 1399, 1400, 1401, 1402, 1403, 1404, 1405, 1406, 1407, 1408, 1409, 1410, 1411, 1412, 1413, 1414, 1415, 1416, 1417, 1418, 1419, 1420, 1421, 1422, 1423, 1424, 1425, 1426, 1427, 1428, 1429, 1430, 1431, 1432, 1433, 1434, 1435, 1436, 1437, 1438, 1439, 1440, 1441, 1442, 1443, 1444, 1445, 1446, 1447, 1448, 1449, 1450, 1451, 1452, 1453, 1454, 1455, 1456, 1457, 1458, 1459, 1460, 1461, 1462, 1463, 1464, 1465, 1466, 1467, 1468, 1469, 1470, 1471, 1472, 1473, 1474, 1475, 1476, 1477, 1478, 1479, 1480, 1481, 1482, 1483, 1484, 1485, 1486, 1487, 1488, 1489, 1490, 1491, 1492, 1493, 1494, 1495, 1496, 1497, 1498, 1499, 1500, 1501, 1502, 1503, 1504, 1505, 1506, 1507, 1508, 1509, 1510, 1511, 1512, 1513, 1514, 1515, 1516, 1517, 1518, 1519, 1520, 1521, 1522, 1523, 1524, 1525, 1526, 1527, 1528, 1529, 1530, 1531, 1532, 1533, 1534, 1535, 1536, 1537, 1538, 1539, 1540, 1541, 1542, 1543, 1544, 1545, 1546, 1547, 1548, 1549, 1550, 1551, 1552, 1553, 1554, 1555, 1556, 1557, 1558, 1559, 1560, 1561, 1562, 1563, 1564, 1565, 1566, 1567, 1568, 1569, 1570, 1571, 1572, 1573, 1574, 1575, 1576, 1577, 1578, 1579, 1580, 1581, 1582, 1583, 1584, 1585, 1586, 1587, 1588, 1589, 1590, 1591, 1592, 1593, 1594, 1595, 1596, 1597, 1598, 1599, 1600, 1601, 1602, 1603, 1604, 1605, 1606, 1607, 1608, 1609, 1610, 1611, 1612, 1613, 1614, 1615, 1616, 1617, 1618, 1619, 1620, 1621, 1622, 1623, 1624, 1625, 1626, 1627, 1628, 1629, 1630, 1631, 1632, 1633, 1634, 1635, 1636, 1637, 1638, 1639, 1640, 1641, 1642, 1643, 1644, 1645, 1646, 1647, 1648, 1649, 1650, 1651, 1652, 1653, 1654, 1655, 1656, 1657, 1658, 1659,

### 3. Packing Accessory Section



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#### VDR ELECTRICAL TROUBLESHOOTING

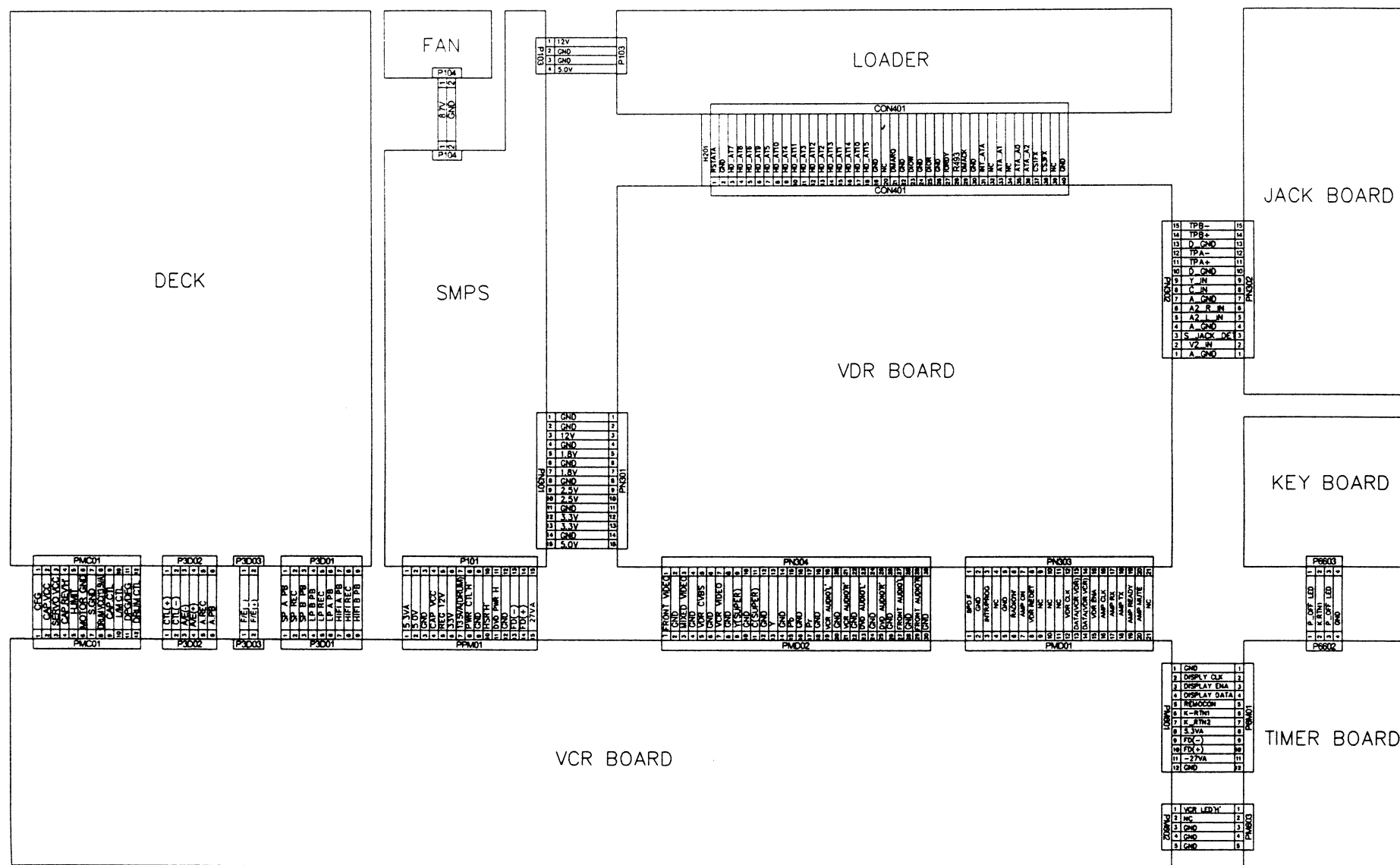
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## OVERALL WIRING DIAGRAMS



## VCR PART ELECTRICAL ADJUSTMENT PROCEDURES

### 1. Servo Adjustment

#### 1) PG Adjustment

- Test Equipment
- a) OSCILLOSCOPE : PAL SP TEST TAPE

#### • Adjustment And Specification

MODE	MEASUREMENT POINT	ADJUSTMENT POINT	SPECIFICATION
PLAY	V.Out H/SW(TP)	R/C TRK JIG KEY	$6.5 \pm 0.5H$

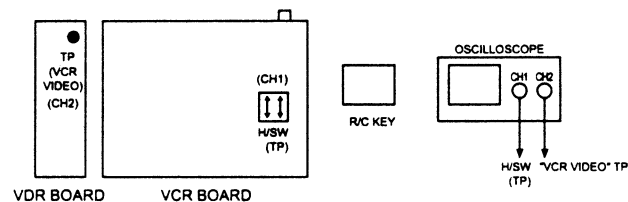
#### • Adjustment Procedure

- a) Insert the SP Test Tape and play.
- b) Connect the CH1 of the oscilloscope to the H/SW and CH2 to the "VCR VIDEO" TP for the VCR.
- c) Trigger the mixed Combo Video Signal of CH2 to the CH1 H/SW, and then check the distance (time difference), which is from the selected A(B) Head point of the H/SW signal to the starting point of the vertical synchronized signal, to  $6.5H \pm 0.5H$  ( $416\mu s$ ,  $1H=64\mu s$ ).

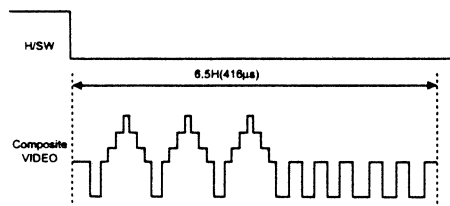
#### • PG Adjustment Method

- a-1) Playback the SP standard tape
- b-2) Wait for 3seconds with F/P "REC" key and "PLAY" key pressed at the same time. < Digitron[ - - ] >
- c-3) Repeat the above step(No.b-2), then it finishes the PG adjusting automatically. < Digitron[ PG ] >
- d-4) Stop the playback, then it goes out of PG adjusting mode after many the PG data.

#### • CONNECTION

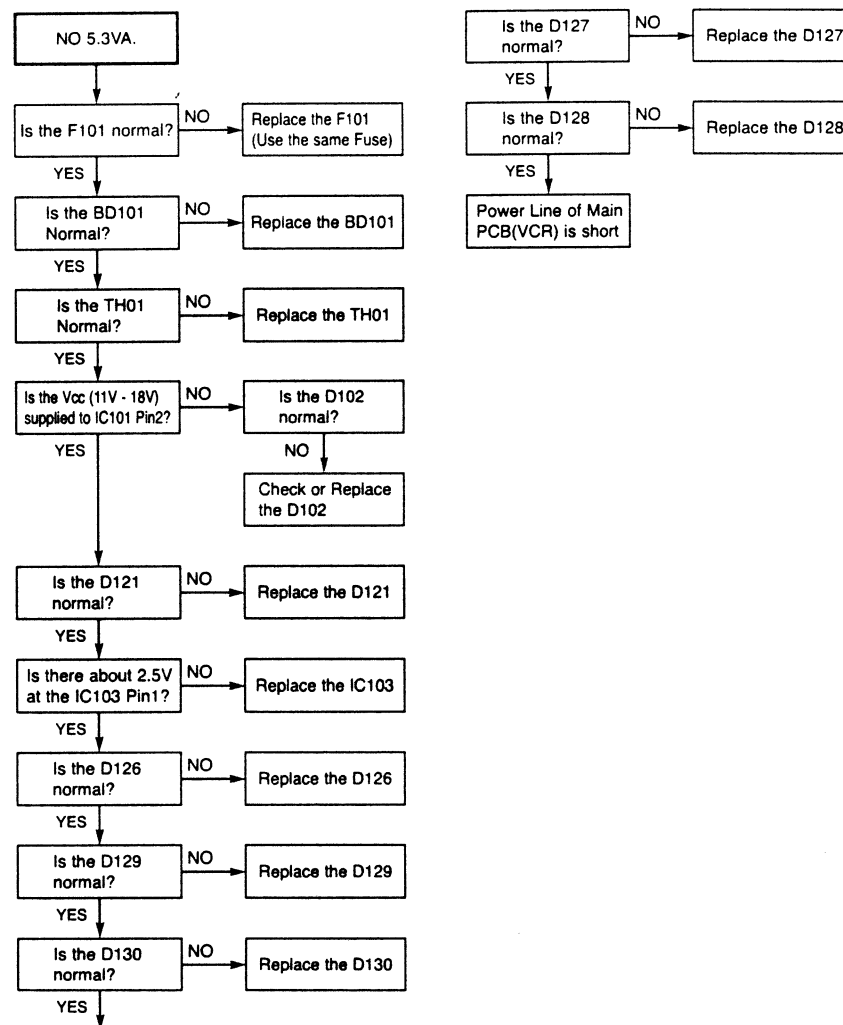


#### • WAVEFORM

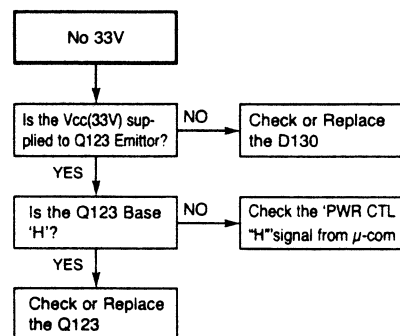
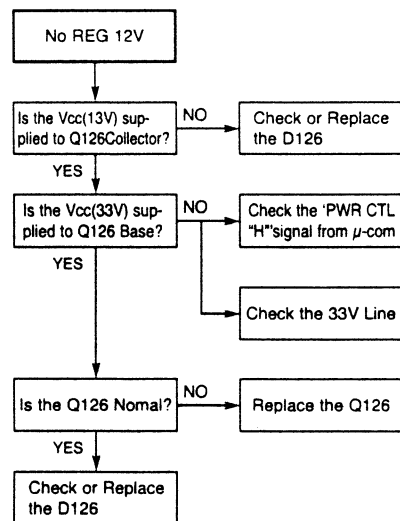
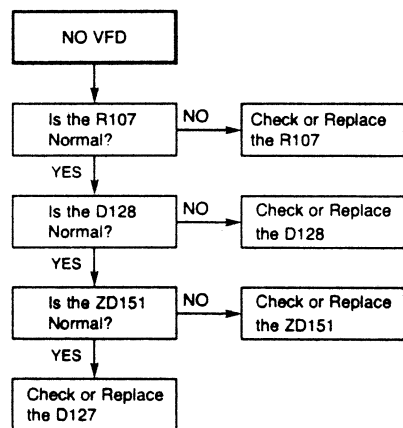
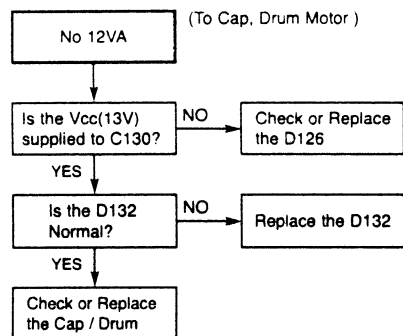


## VCR ELECTRICAL TROUBLESHOOTING GUIDE

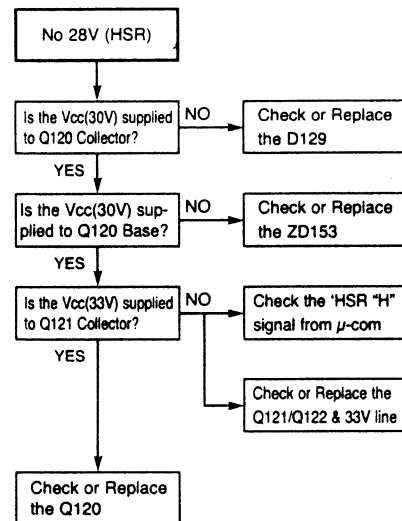
### 1. Power(SMPS) CIRCUIT



## VCR ELECTRICAL TROUBLESHOOTING GUIDE



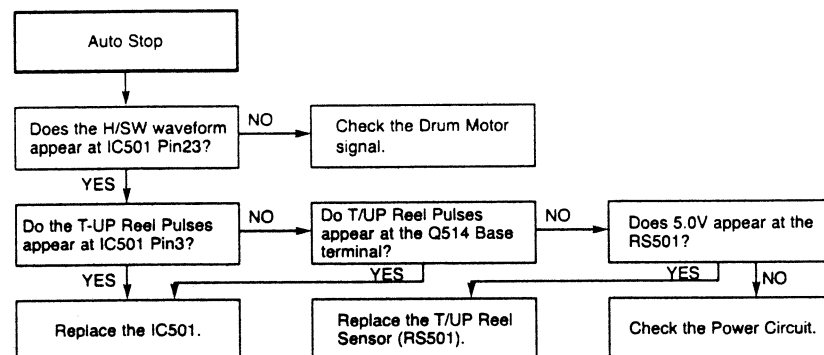
## VCR ELECTRICAL TROUBLESHOOTING GUIDE



## VCR ELECTRICAL TROUBLESHOOTING GUIDE

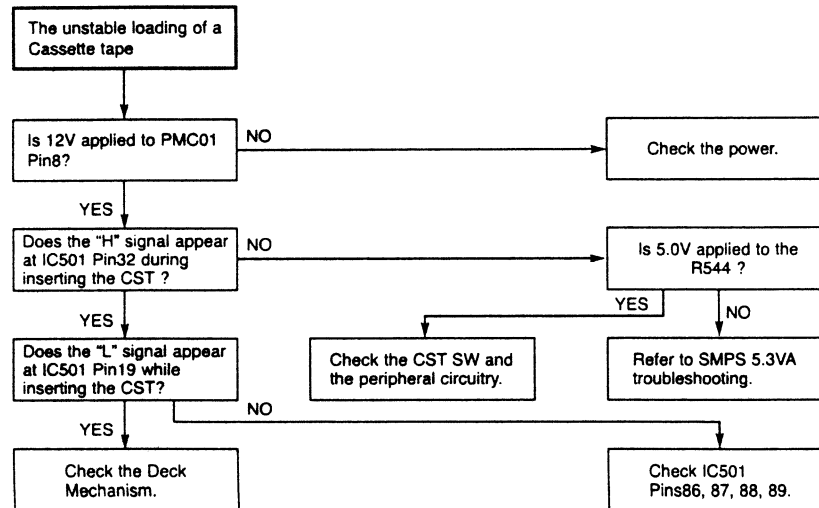
### 2. SYSTEM/KEY CIRCUIT

#### (1) AUTO STOP



**Note :** Auto stop can occur because Grease or Oil has dried up

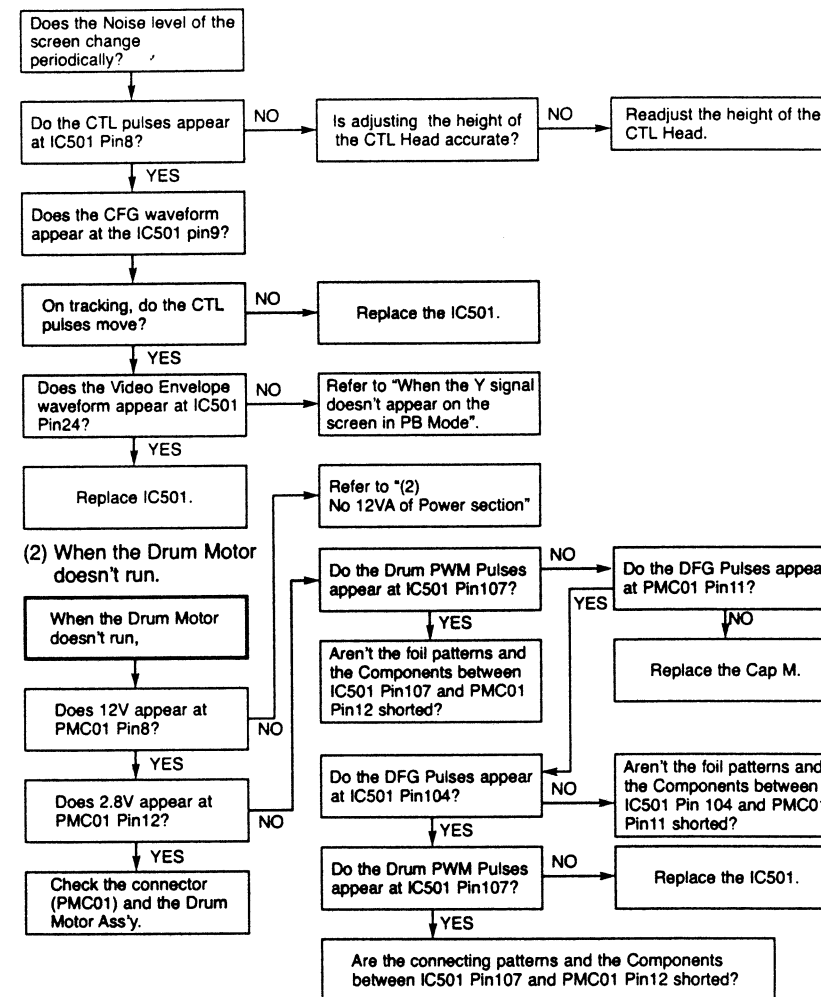
#### (2) The unstable loading of a Cassette tape



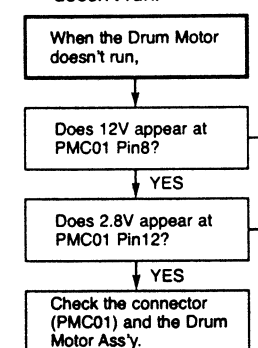
## VCR ELECTRICAL TROUBLESHOOTING GUIDE

### 3. SERVO CIRCUIT

#### (1) Unstable Video in PB MODE



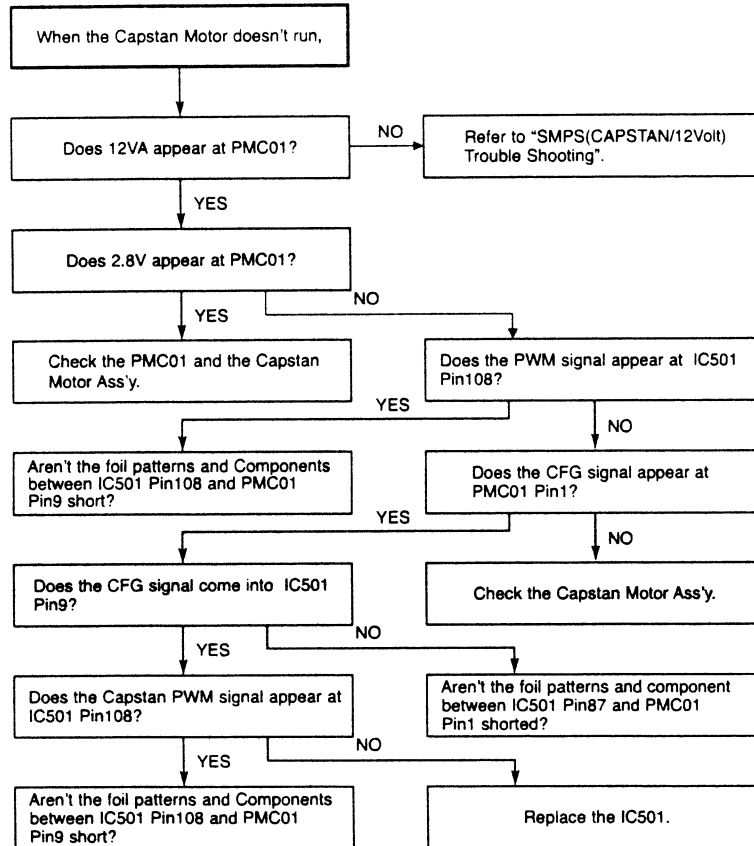
#### (2) When the Drum Motor doesn't run.





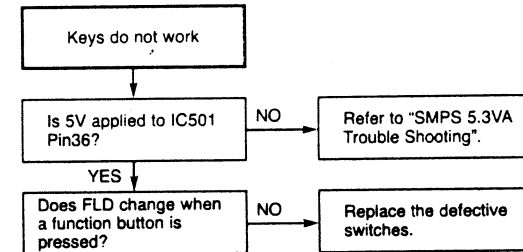
## VCR ELECTRICAL TROUBLESHOOTING GUIDE

(3) When the Capstan Motor doesn't run,



## VCR ELECTRICAL TROUBLESHOOTING GUIDE

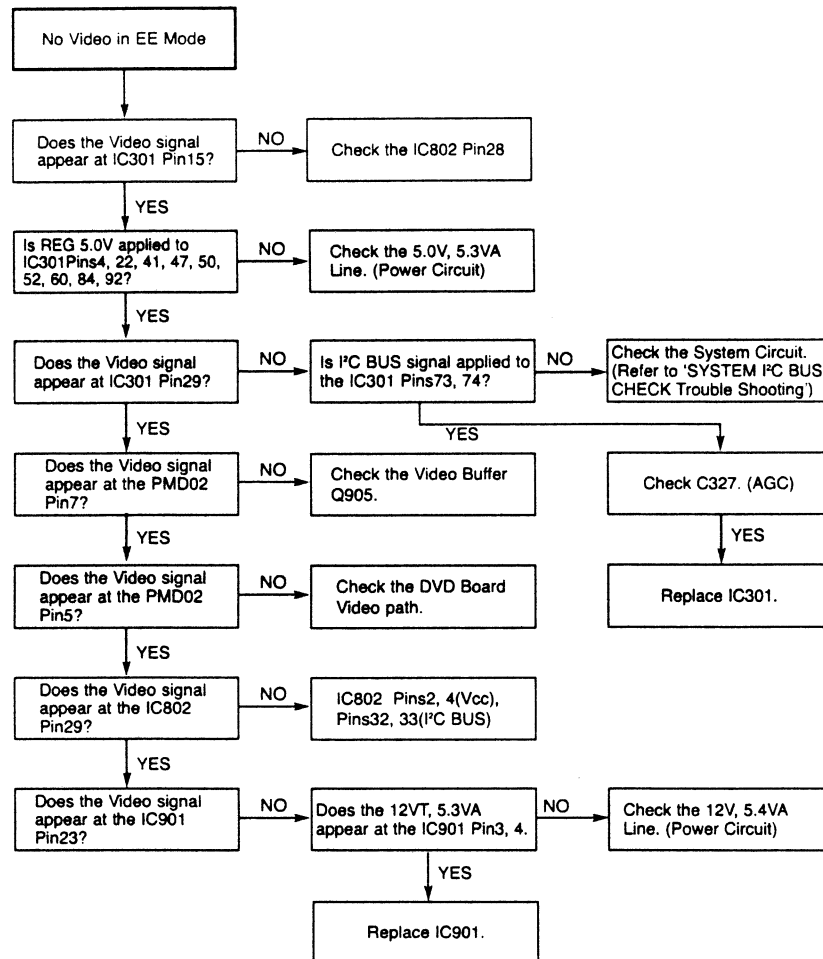
(4) Keys do not work



## VCR ELECTRICAL TROUBLESHOOTING GUIDE

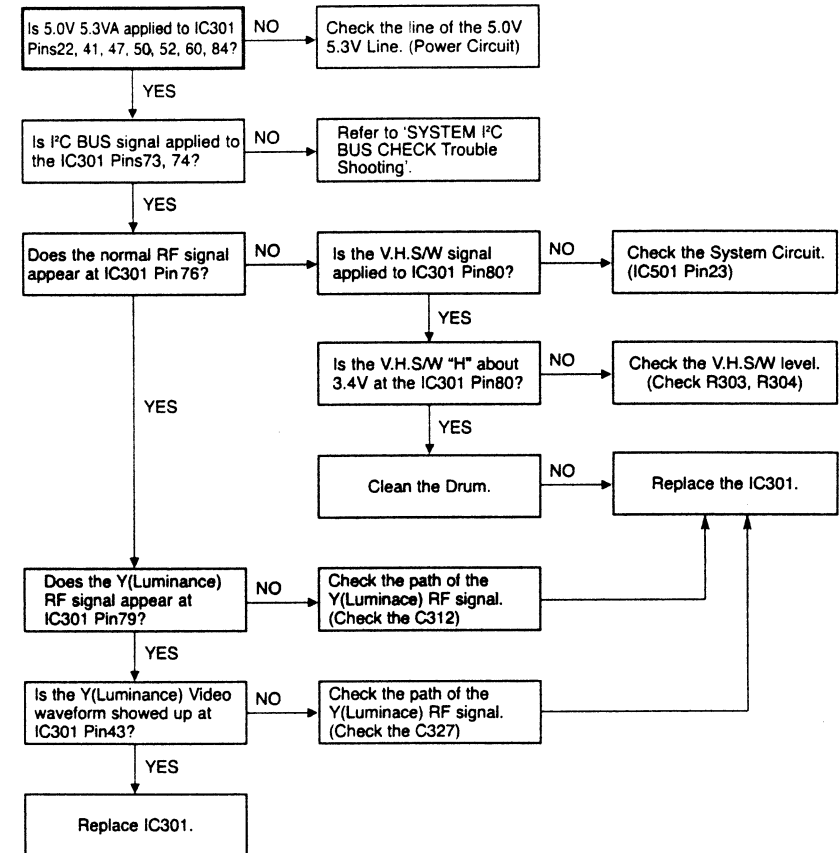
### 4. Y/C CIRCUIT

(1) No Video in EE Mode,



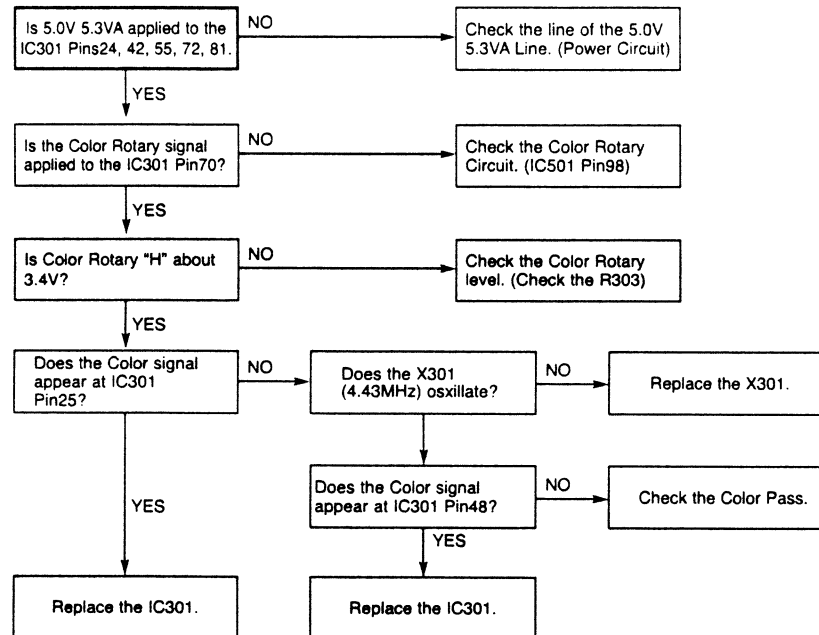
## VCR ELECTRICAL TROUBLESHOOTING GUIDE

(2) When the Y(Luminance) signal doesn't appear on the screen in PB Mode,



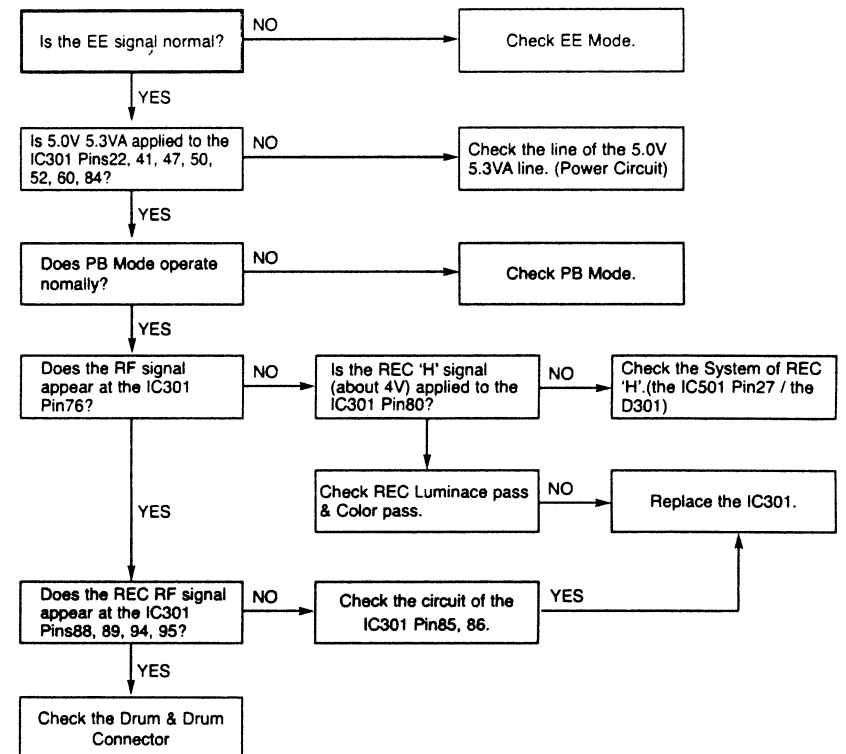
## VCR ELECTRICAL TROUBLESHOOTING GUIDE

(3) When the C(Color) signal doesn't appear on the screen in PB Mode,



## VCR ELECTRICAL TROUBLESHOOTING GUIDE

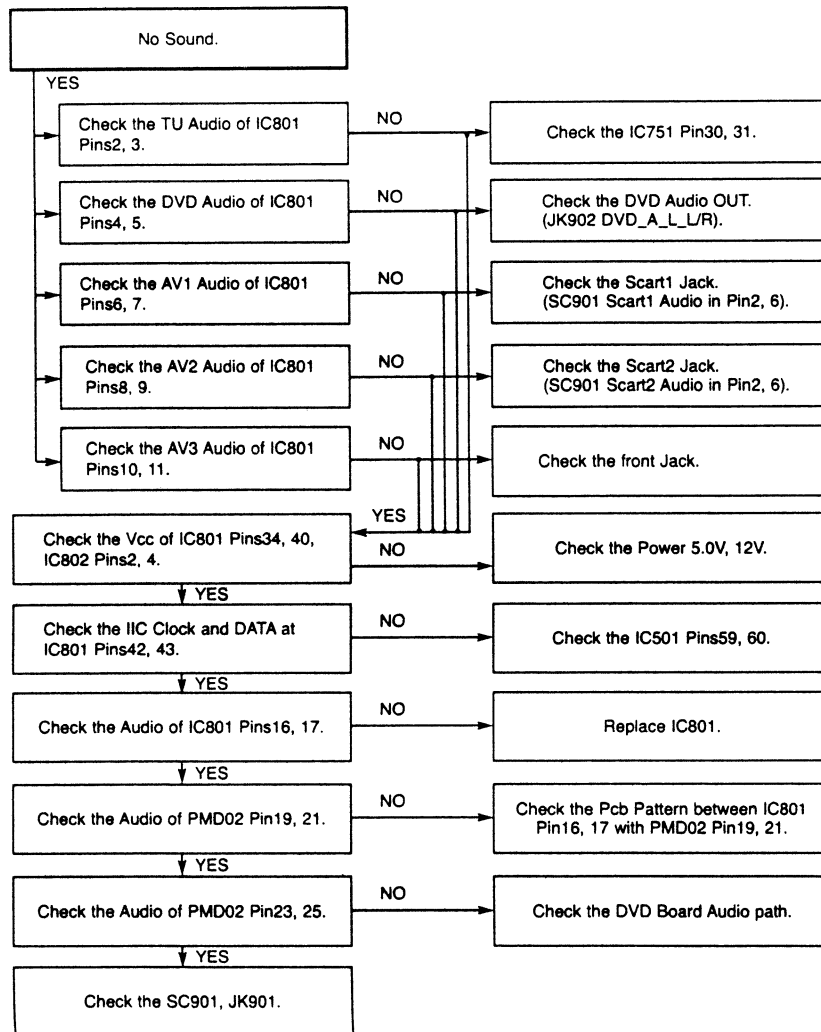
(4) When the Video signal doesn't appear on the screen in REC Mode,



## VCR ELECTRICAL TROUBLESHOOTING GUIDE

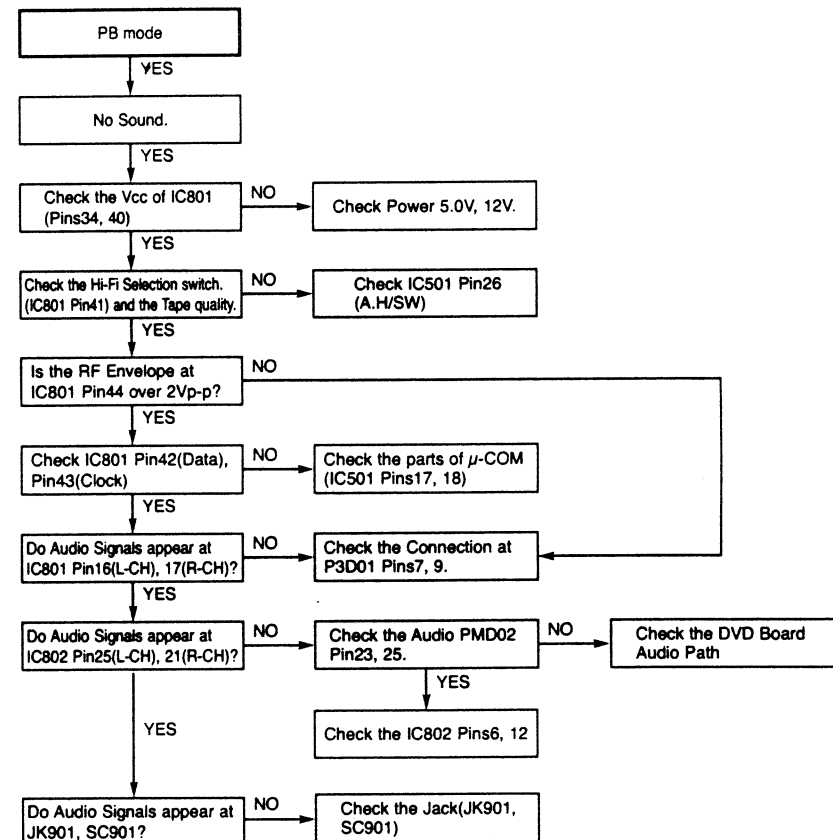
### 5. HI-FI CIRCUIT

#### (1) No Sound(EE Mode)



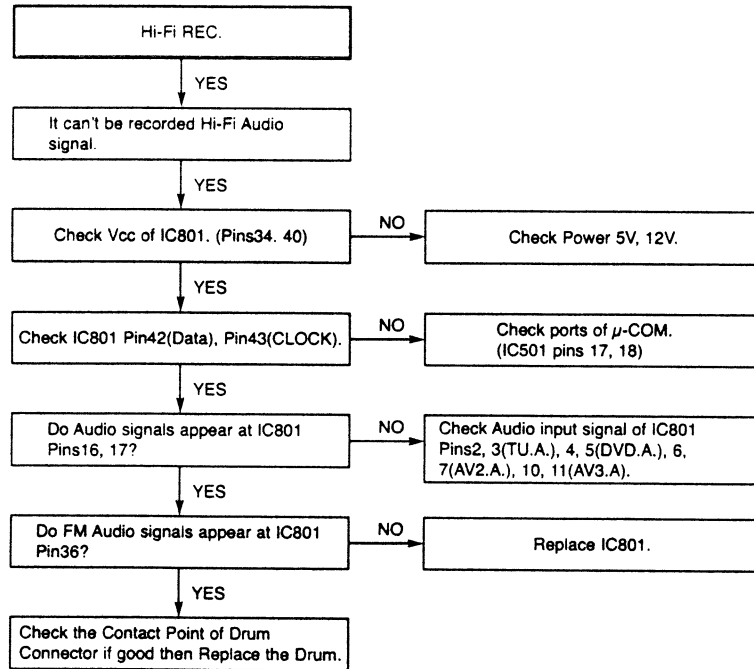
## VCR ELECTRICAL TROUBLESHOOTING GUIDE

#### (2) Hi-Fi Playback



## VCR ELECTRICAL TROUBLESHOOTING GUIDE

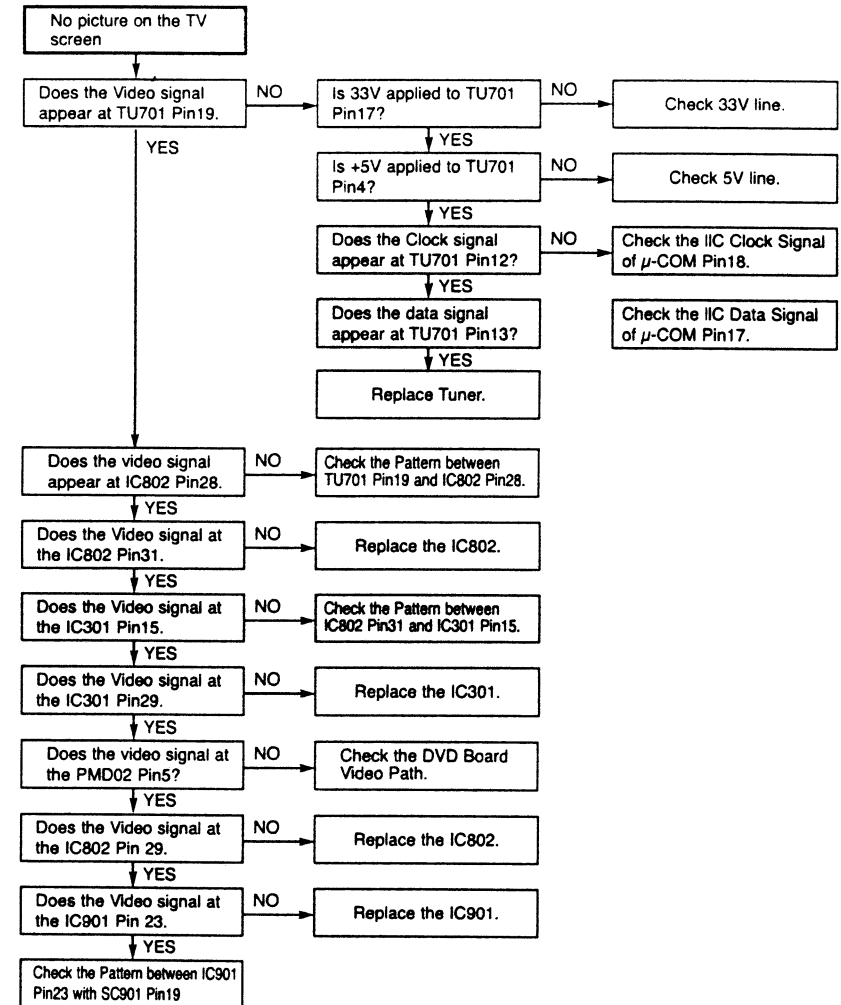
(3)



## VCR ELECTRICAL TROUBLESHOOTING GUIDE

### 6. Tuner/IF CIRCUIT

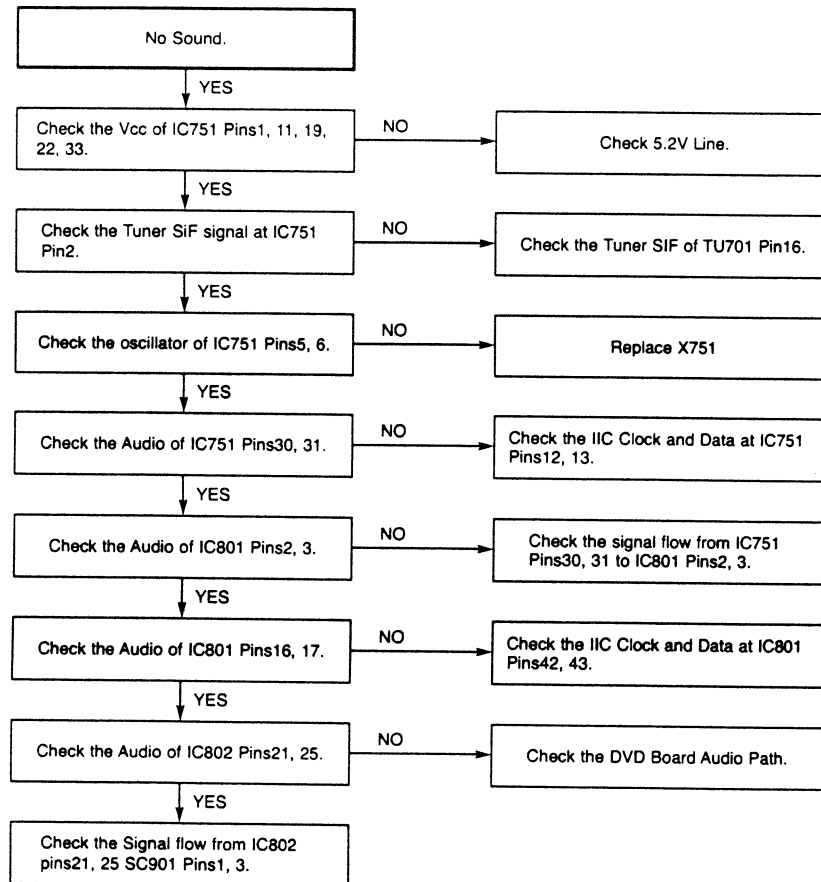
(1) No Picture on the TV screen



## VCR ELECTRICAL TROUBLESHOOTING GUIDE

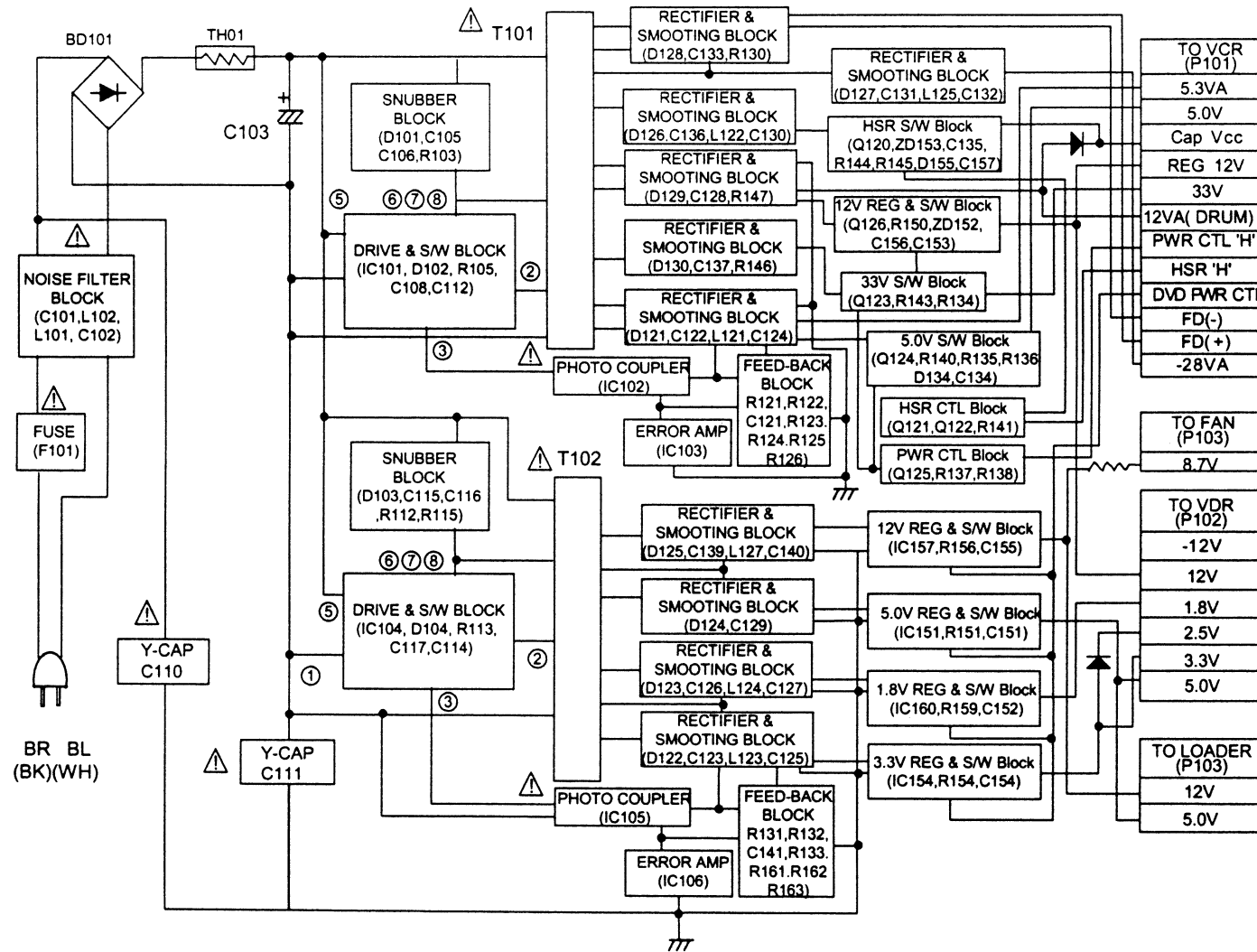
## MEMO

(B) No Sound



# BLOCK DIAGRAMS

## 1. POWER(SMPS) BLOCK DIAGRAM

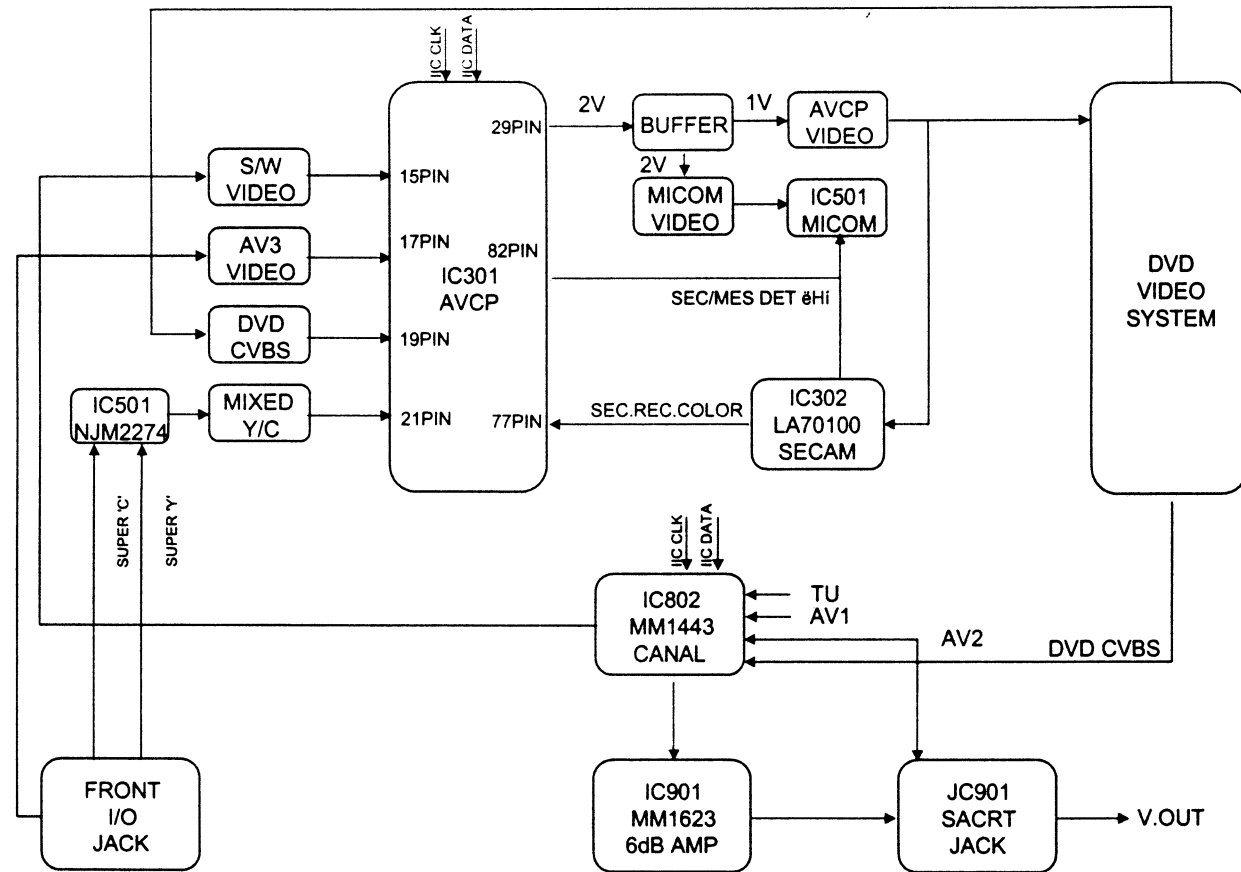


VCR+DVD REC SCART+RCA

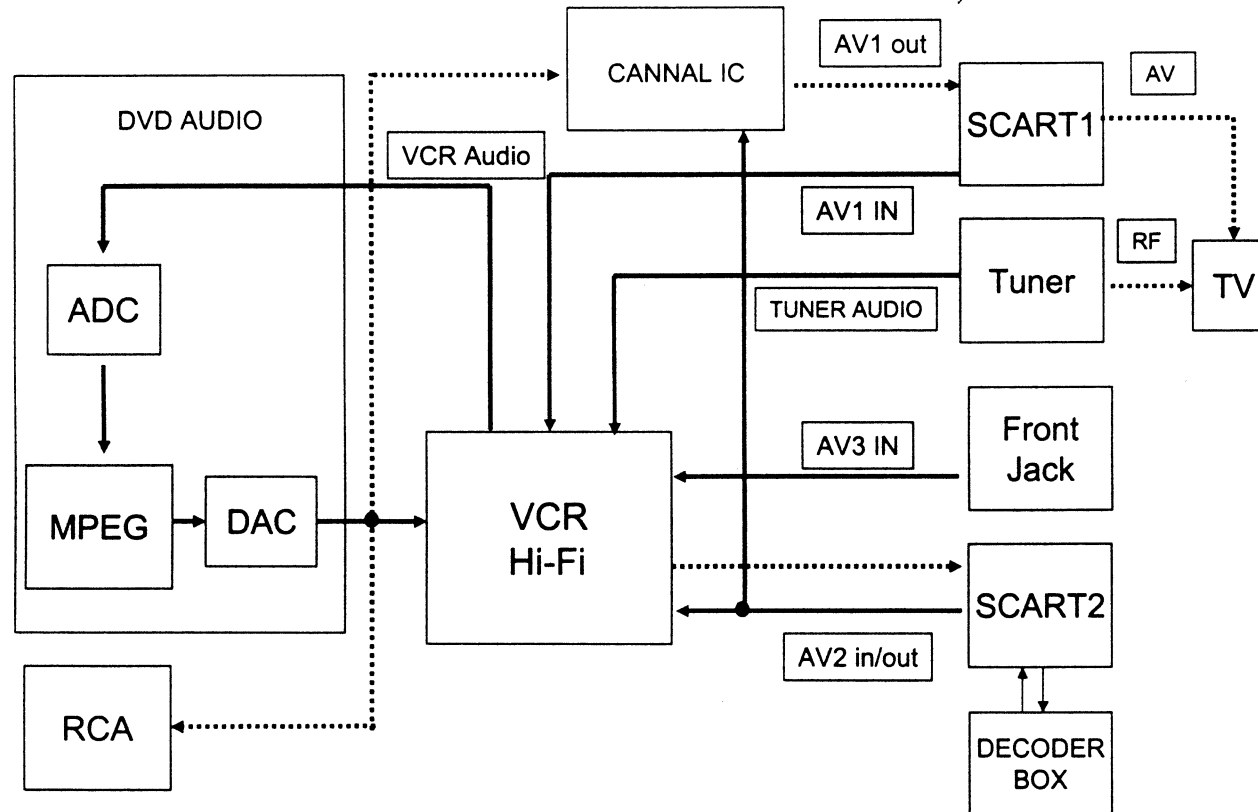




#### 4. Y/C BLOCK DIAGRAM

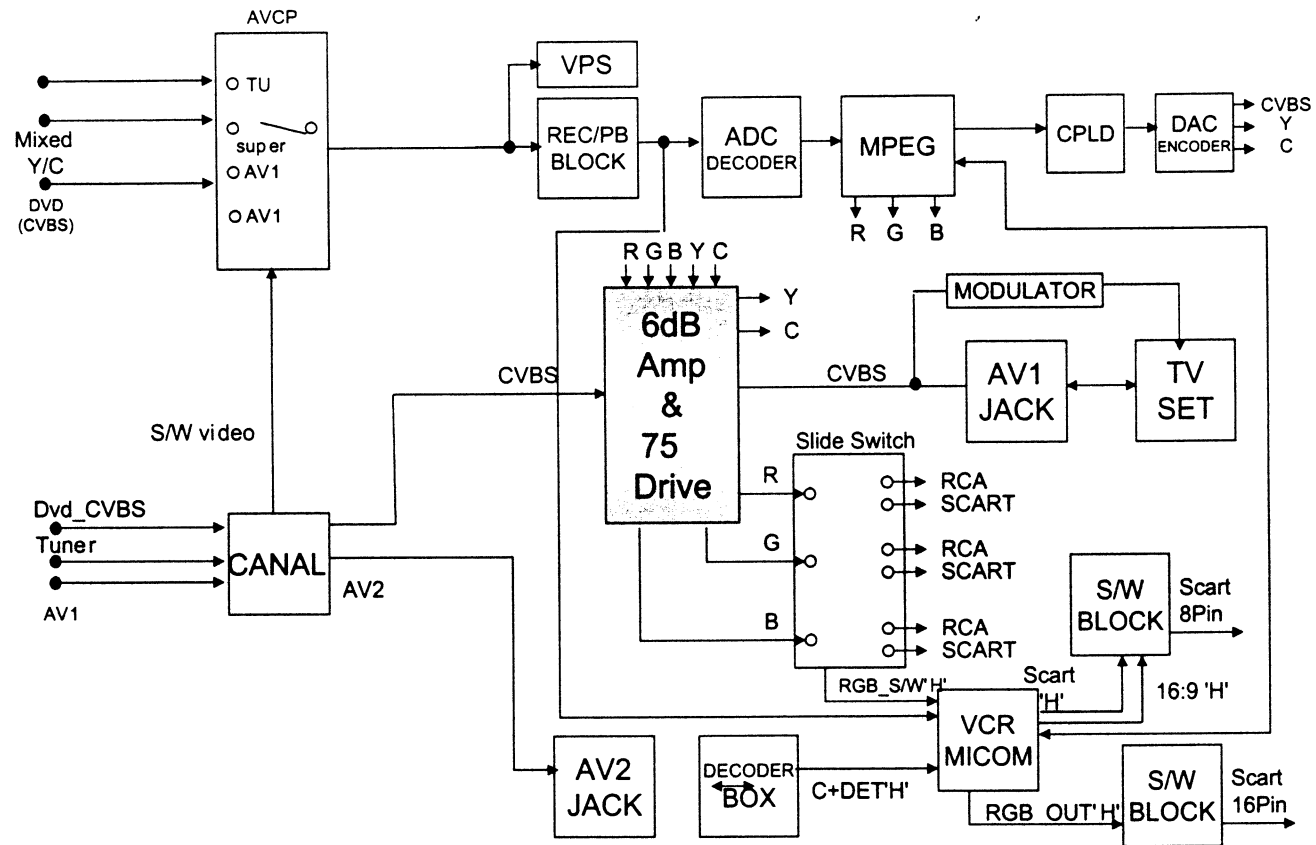


## 5. Hi-Fi BLOCK DIAGRAM





## 7. SCART & SWITCH BLOCK DIAGRAM

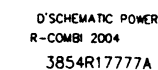


## 1. POWER(SMPS) CIRCUIT DIAGRAM

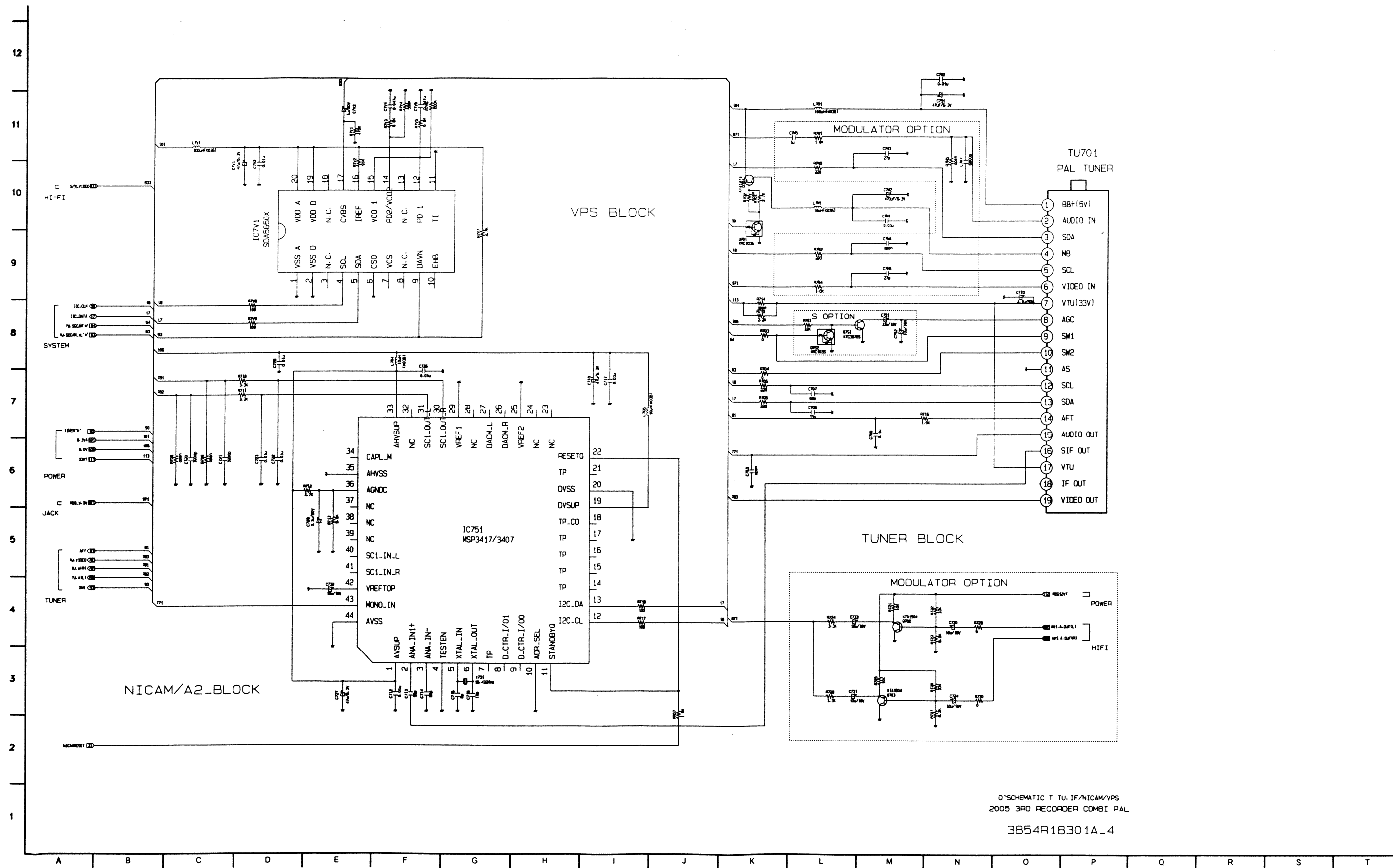
WHEN SERVICING THIS CHASSIS, UNDER NO CIRCUMSTANCES SHOULD THE ORIGINAL DESIGN BE MODIFIED OR ALTERED WITHOUT PERMISSION FROM THE PHILIPS ELECTRONICS CORPORATION. ALL COMPONENTS SHOULD BE REPLACED ONLY WITH TYPES IDENTICAL TO THOSE IN THE ORI-

**KEYWORDS:** *child abuse; child sexual abuse; child sexual exploitation; child sexual abuse investigation; child sexual abuse investigation team; child sexual abuse investigation unit; child sexual abuse investigation team; child sexual abuse investigation unit; child sexual abuse investigation team; child sexual abuse investigation unit*

OE



## 2. TUNER CIRCUIT DIAGRAM



D\*SCHEMATIC T TU. IF/NICAM/VPS  
2005 3RD RECORDER COMBI PAL

3854R18301A\_4

A vertical number line with tick marks and labels from 1 to 12. The labels are placed to the left of the line, and the tick marks are horizontal lines extending from the vertical line.

[illegible]

D' SCHEMATIC AYCP  
2005 3RD RECORDER COMBI  
3854R18301A-2





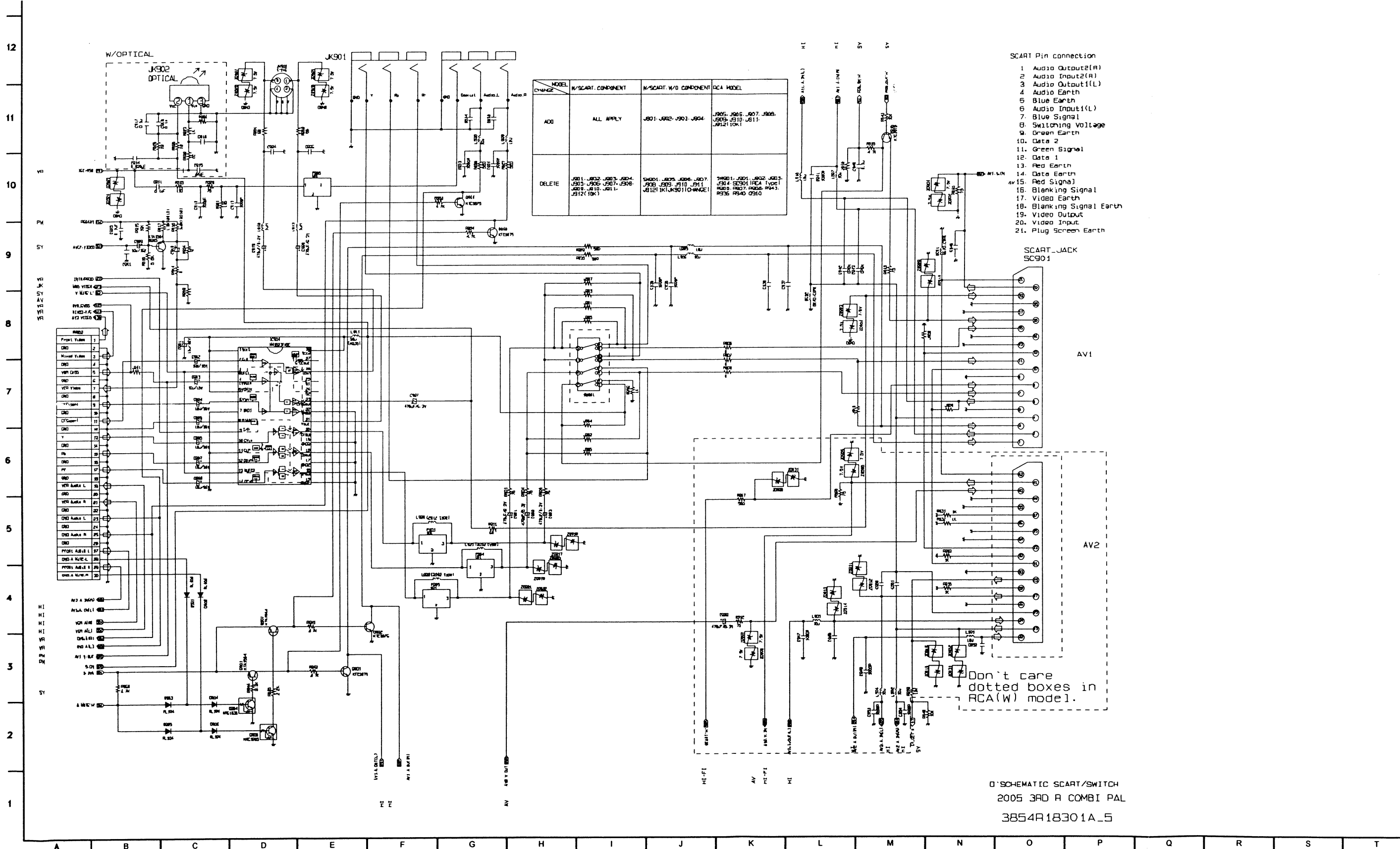
D' SCHEMATIC SYSTEM  
3RD RECORDER COMBI PAL

3854R18301A-1

12  
11  
10  
9  
8  
7  
6  
5  
4  
3  
2  
1



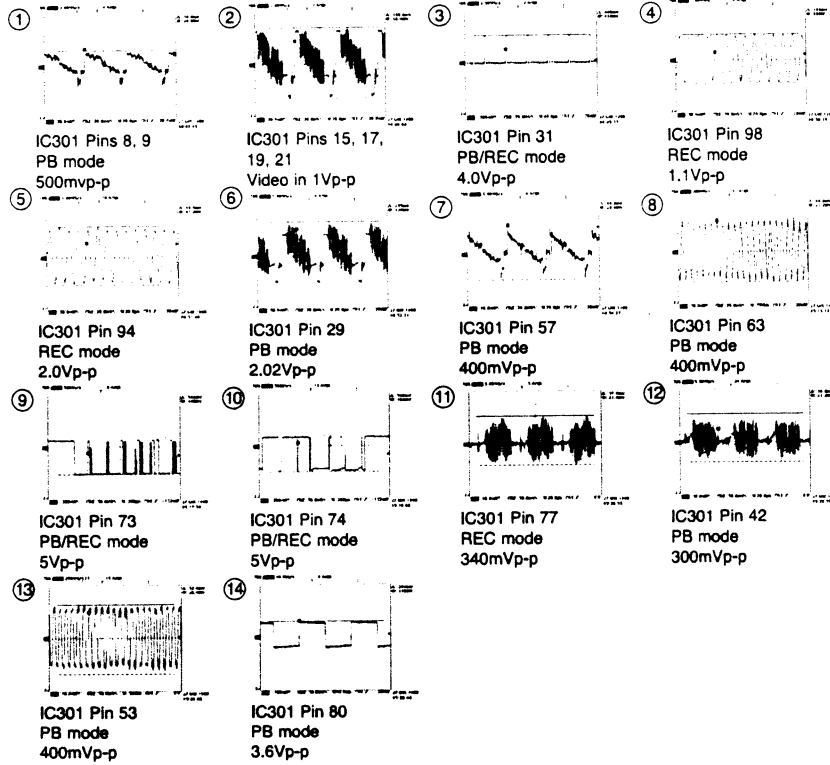
## 6. SCART CIRCUIT DIAGRAM (SCART Model Only)



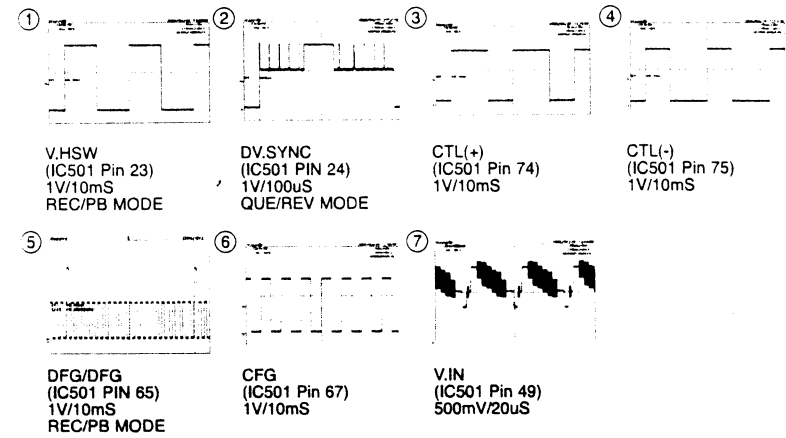
D' SCHMATIC KEYBOARD+TIMER  
RECORDER COMBI 8TOOL  
3854R18328C

## WAVEFORMS

### ◆ IC301 Oscilloscope Waveform



### ◆ IC501 Waveform Photographs



E-MODE	E	C	B
NO.			
Q501	0	0	740M
Q503	5.19	5.19	4.57
Q504	Y/C_VIDEO	0	Y/C_VIDEO
Q505	Y/C_VIDEO	0	Y/C_VIDEO
Q506	0	2Fsc	2Fsc
Q514	0	0	4.87
Q515	0	0	4.87
Q301	0	5.04	0
Q302	5.04	0	5.04
Q303	0	0	0
Q304	0	0	0
Q306	4.93	4.81	4.79
Q308	Y/C_VIDEO	0	Y/C_VIDEO
Q311	5.04	5.04	0
Q7S1	0	1.47	0
Q7S2	0	0	5.13
Q901	5.1	0	4.5
Q902	0	0	0
Q903	0	0	0
Q904	0	4.5	0
Q905	2.69	0	2
Q906	1.7	0	1.7
Q907	11.9	11.8	0
Q908	0	0	5
Q909	0	7.4	0
Q910	4.6	5	5.1

SECTION NO.	EE		PLAY	
	+	-	+	-
C203	3.55	0	3.51	0
C204	3.34	0	3.59	0
C207	3.12	0	1.93	0
C210	2.26	0	2.94	0
C213	3.29	0	2.77	0
C215	4.97	0	4.89	0
C301	5.01	0	0	0
C302	5.03	0	4.24	0
C304	4.99	0	4.85	0
C307	2.29	4.87	2.27	0
C311	5.11	5	190M	0
C314	2.35	0	2.31	0
C315	2.92	2.79	2.83	2.31
C316	1.48	0	1.57	0
C318	4.1	0	2.85	0
C320	2.39	0	2.2	0
C322	4.13	0	4.09	0
C323	2.35	0	2.31	0
C324	2.42	0	0	0
C325	2.95	0	3.13	0
C327	2.61	2.46	3.18(Y/C)	3.18(Y/C)
C331	17.5M	0	0	0
C333	4.94	0	4.88	0
C336	5.04	0	5.01	0
C337	3.36	0	2.53	0
C339	3.38	0	2.62	0
C346	5	0	4.91	0
C347	2.16	0	2.14	0
C348	1.62	0	1.5	0
C349	5.02	0	4.92	0
C353	2.31	0	2.25	0
C356	1.97	0	2.07	0
C357	2.17	0	2.02	0
C359	264M	0	130M	0
C362	5.2	0	5.19	0
C391	2.99	2.7	3.02	780M
C392	3.03	2.75	3.07	2.75
C393	3.03	2.76	3.12	0
C501	5.2	0	5.19	0
C502	5.19	0	5.19	0
C504	2.36	2.06	2.3	2
C505	5.22	0	5.19	0
C507	4.95	0	4.95	0
C511	2.41	1.32	2.41	1.3
C522	2.61	0	2.64	0
C523	2.61	2.61	2.64	0
C524	2.61	0	2.64	0
C526	16.74	0	13.6	0
C534	4.24	0	62M	0
C546	14.73	0	14.2	0
C7S1	4.9	4.17	4.85	4.09
C7S2	4.9	0	4.85	0
G7V1	5.22	0.91	5.28	0
G7V3	2.88	1.47	2.16	950M
C710	32.61	0	32.4	0

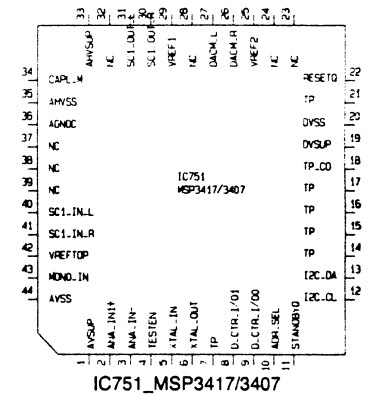
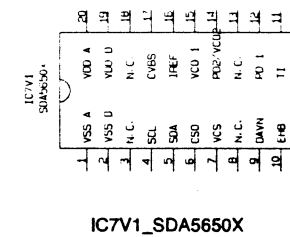
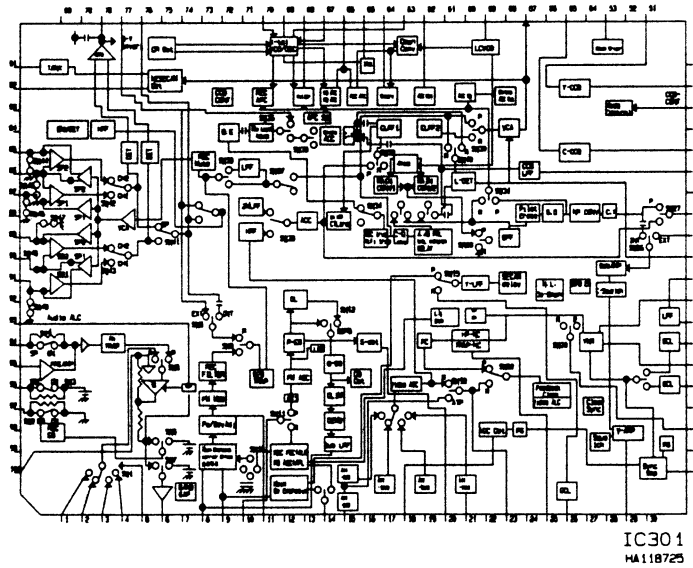
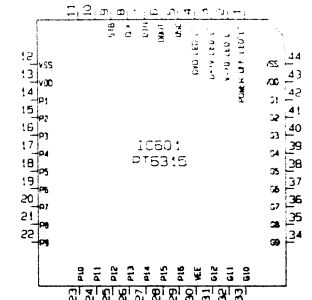
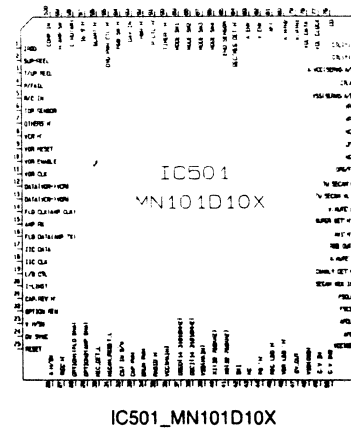
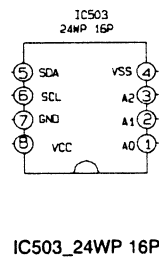
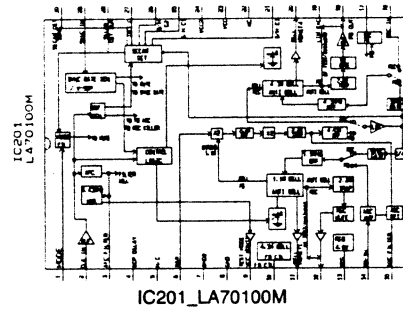
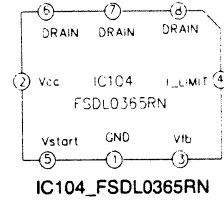
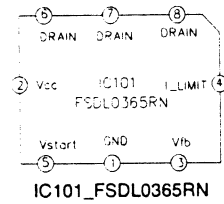
SECTION	EE		PLAY	
NO.	+	-	+	-
C718	5.05	0	4.96	0
C719	5.04	0	4.96	0
C724	2.39	164M	2.31	0

## • CIRCUIT VOLTAGE CHART

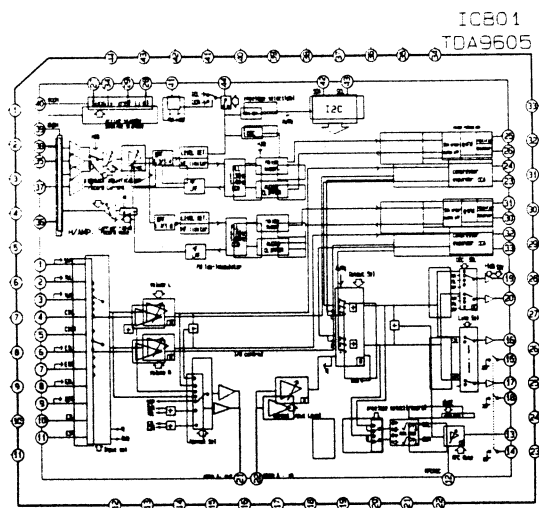
MODE PIN NO.	EE	PLAY
IC301		
1	20m	100m
2	20m	100m
3	20m	100m
4	1.95V	4.88V
5	1.94V	1.88v
6	2.64	3.12V
7	2.8V	2.74
8	2.5V	1.7V
9	2.04	1.3
10	1.80V	1.88
11	2.0V	1.8
12	1.6V	0.72
13	0V	0
14	1.28V	1.3
15	3.40V	3.36
16	0	4.78
17	2.38V	2.32
18	1.88V	2.84
19	3.02V	2.94
20	0	0
21	2.38V	2.34V
22	4.88V	4.82
23	2.64V	2.24
24	0	0
25	2.08V	2.14
26	3.08V	2.66V
27	0	0
28	150mV	140m
29	3.88V	3.18V
30	2.08V	2.74V
31	4.74V	4.72m
32	2.08V	2.12V
33	2.42V	2.26
34	1.58	1.54V
35	3.30V	3.36
36	2.50V	2.32
37	3.10V	3.18
38	2.60V	2.28
39	1.40V	1.42V
40	2.30V	2.16V
41	1.08V	1.58V
42	1.82V	1.84V
43	2.04V	2.28V
44	0	0
45	2.88V	3.04V
46	2	2.98
47	4.82	4.78
48	120mV	2.40
49	3.48	1.94V
50	4.78	4.74
51	2.08V	1.98
52	4.8V	4.70
53	2.80V	2.8
54	0	0
IC501		
1	0	0
2	4.52	4.82
3	4.84	4.84v
4	4.84	4.58v
5	4.56	4.58v
6	80m	80m
7	0	0
8	4.98	4.98
IC701		
9	4.98	5.30
10	4.8	4.80v
11	4.82	4.82
12	4.72v	4.82
13	4.92	4.92
14	5.02	5.02
15	0	0
16	4.98v	4.98
17	5.04	5.04
18	4.98v	9.98
19	2.46v	2.46
20	3.36V	3.36
21	0	0
22	0	0
23	4.96v	4.96v
24	120mv	140m
25	4.94	4.94
26	4.92v	4.92v
27	20m	20mv
28	5.02	5.02v
29	4.98v	4.98
30	4.84v	4.84
31	5.00v	5.00v
32	0	0
33	4.98	4.94
34	0	5.00v
35	5.02	100m
36	3.16	3.12v
37	5.7v	Du/Ck(5.5)
38	0	5.7v
39	520m	0
40	4.84	520m
41	4.83	Du/Ck(5.82)
42	4.86v	4.86v
43	0	0
44	5.02	5.0v
45	0	0
46	3.94	3.94v
47	2.88	2.88v
48	0	0
49	0.98	2.94
50	1.84	1.94v
51	0.98	4.78
52	3.28	3.28v
53	2.38	2.38v
54	2.52	2.54v
55	1.88	1.88
56	0	0
57	0	0
58	120m	120m
59	4.92v	4.92v
60	4.92v	4.92v
61	0	0
62	4.82	4.82v
63	3.98	3.98v
IC801		
64	0	0
65	2.36	2.36v
66	0	0
67	4.68	9.68v
68	0	0
69	2.48	2.48v
70	2.48	2.48
71	0	0
72	2.48	4.98
73	4.92	4.92v
74	0	0
75	2.52	2.42
76	2.42	2.48
77	80m	80m
78	0	0
79	4.02v	4.96v
80	4.96v	4.96
81	2.8	280m
82	1v	2.62v
83	120m	3.24v
84	0	1.96
85	0	0
86	4.98	4.9v
87	4.98	4.98
88	5.0v	5.0v
89	0	0
90	4.88	4.88v
91	0	0
92	0	0
93	5.04v	5.04v
94	4.88	0
95	4.98	4.98
96	0	0
97	0	0
98	4.98	4.98
99	20m	4.98v
100	0	0
IC751		
1	4.88	4.88v
2	1.46	1.48
3	1.38	1.38
4	0	0
5	2.26v	2.24
6	2.38	0
7	0	0
8	0	0
9	0	0
10	0	0
11	0	5.0v
12	5.0v	5.0
13	5.0v	0
14	0	0
15	0	0
16	0	0
17	0	0
18	0	0
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94	0	0
95	0	0
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97	0	0
98	0	0
99	0	0
100	0	0
IC7V1		
1	0	0
2	0	0
3	0	142M
4	DA/CL(5.34)	DA/CL(5.34)
5	DA/CL(5.34)	DA/CL(5.34)
6	0	0
7	DA/CL(5.34)	DA/CL(5.34)
8	0	0
9	DA/CL(5.34)	DA/CL(5.34)
10	DA/CL(5.34)	DA/CL(5.34)
11	0	41M
12	DA/CL(2.82)	DA/CL(2.82)
13	0	0
14	DA/CL(2.82)	DA/CL(62M)
15	2.89	1.41
16	1.53	950M
17	DA/CL(1.14)	DA/CL(810M)
18	0	0
19	5.28	5.24
20	5.26	5.24
IC801		
1	3.28	3.24
2	3.28v	3.28
3	3.32	3.26
4	3.28	3.92
5	3.28	3.92
6	3.28	3.26
IC901		
7	3.28v	3.74
8	3.28	3.24
9	3.28v	3.24
10	3.28	3.24
11	3.28v	3.26
12	0	0
13	3.78	4.52
14	0	0
15	0	640m
16	5.82	6.64
17	5.28v	6.68
18	0	620m
19	6.28	6.66
20	6.28	6.72
21	4.46v	4.42
22	3.28	4.02
23	3.62	3.68
24	3.74	4.12
25	3.74	3.78
26	0.1	640m
27	0	0
28	3.7v	3.68
29	3.66	3.64
30	0.7	680m
31	3.72	3.72v
32	3.74v	4.08
33	3.62	3.68
34	13.4v	13.32
35	580m	520m
36	0	520m
37	580m	520m
38	0	0
39	0	20m
40	4.7	4.76
41	0v	1.68
42	5.0v	5.04m
43	50.v	4.96
44	20m	3.38
IC901		
1	4.76	4.68
2	2.02v	2.24
3	4.88	4.88
4	1.64	1.78
5	4.72	4.78
6	1.88	1.88
7	0	0
8	2.28	2.18
9	0	0
10	1.64v	1.72
11	0	0
12	1.92v	2.08
13	4.86	4.82
14	1.92v	2.08
15	0	2.31
16	2.26v	2.64
IC901		
17	0	0
18	2.28	2.74
19	0	0
20	2.56v	2.58
21	2.64v	2.68
22	0	0
23	2.56v	2.92
24	0	0
25	0	0
26	2.52v	2.98
27	20m	0
28	4.72	4.88
IC901		
1	2.51	2.51
2	2.39	2.39
3	3.54	3.53
4	2.57	2.58
5	1.52	1.34
6	0.43	3.68
7	1.3m	0
8	1.2m	0
9	3.04	3.03
10	2.52	2.52
11	2	2.05
12	3.22	1.97
13	3.99	3.99
14	2.5	2.495
15	3.11	1.93
16	3.2	3.18
17	27.4m	4.11
18	112.1m	3.35
19	2.27	2.26
20	1.99	2.12
21	2.31	2.37
22	0.78	0.81
23	5.02	5.01
24	5.02	5
25	2.44	2.27
26	2.44	2.26
27	2.82	2.85
28	181.5m	187.4m
29	371.6m	212.2m
30	2.08	2.08
IC302		
1	3	2.99
2	36.3m	38.1m
3	3.04	3.04
4	6.4m	39.1m
5	3.04	3.04
6	5.02	5.03
7	2.24	2.23
8	0	0
IC804		
1	6.71	6.66
2	5.05	5.05

MODE PIN NO.	EE	PLAY
3	6.02	5.96
4	0	0
5	6	5.96
6	5.99	5.94
7	22.3m	21.3m
8	6.68	6.65
9	6.7	6.67
10	1.1m	0
11	6.71	6.68
12	5.04	5.05
13	12.03	11.99
14	6.7	6.7
15	0	0
16	6.73	6.69
IC902		
1	1.3	1.3
2	4.9	4.9
3	1.66	1.56
4	0	0
5	0	0
6	4.9	4.9
7	1.7	1.6
8	0	0
IC903		
1	1.37	1.37
2	5	5
3	2.18	2.17
4	0	0
5	0	0
6	5.21	5.21
7	2	2.17
8	0	0

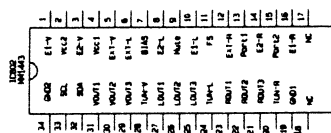
## • IC BLOCK DIAGRAMS



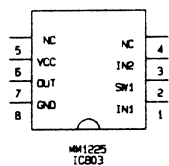




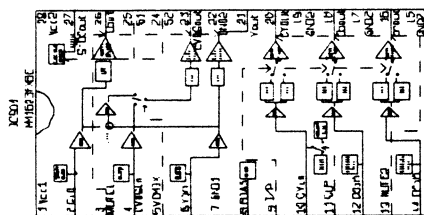
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IC802\_MM1443



IC803\_MM1225



IC901\_MM1623FX8E

# LOCATION GUIDE

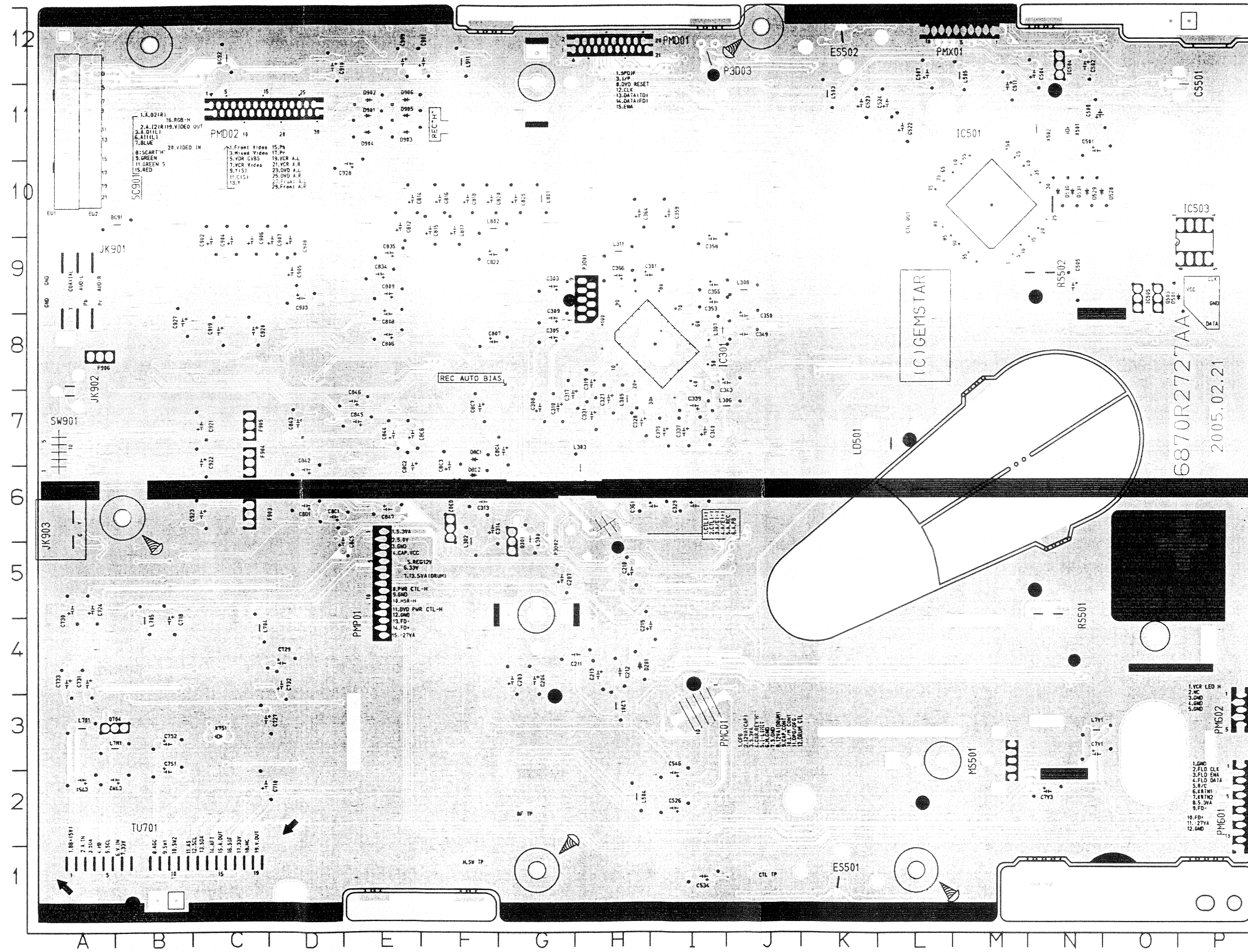
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BC92	N12	C368	18	C722	N4	C8C1	*6	IC505	B9	PIN0042 D10	PIN0227 L7	0910	N10	R542	B8	R7M2	P2	R925	P7	
C201	15	C369	19	C723	N4	C8C1	*2	IC751	N4	PIN0043 D11	PIN0228 N9	0911	N8	R544	B11	R7M4	O2	R926	P7	
C202	J4	C370	19	C724	P5	C902	*9	IC7Y1	C2	PIN0044 E10	PIN0229 N8	0912	N10	R545	N4	R7M5	P2	R927	P9	
C203	J4	C371	09	C726	N4	C903	*9	IC801	K9	PIN0045 D10	PIN0230 N8	R201	14	R546	N4	R7M6	P2	R928	P9	
C204	J4	C372	18	C727	N3	C904	*9	IC802	L7	PIN0046 D11	PIN0231 L11	R202	14	R547	C10	R7S1	O2	R929	09	
C205	J5	C375	H7	C728	N4	C905	*6	IC803	M5	PIN0047 B8	PIN0232 K11	R203	14	R548	B11	R7V1	C2	R930	O10	
C206	15	C376	H8	C729	N4	C906	*9	IC901	N9	PIN0048 I11	PIN0235 O11	R204	H5	R550	E7	R7V2	C2	R931	O10	
C207	J5	C378	14	C730	P5	C907	*9	J901	P7	PIN0049 H10	PIN0236 O5	R205	15	R551	E7	R7V3	C2	R932	O11	
C208	15	C379	17	C731	P4	C908	*9	J902	P7	PIN0050 J11	PIN0237 O5	R301	18	R552	C5	R7V4	C2	R933	O11	
C209	15	C380	H7	C732	N4	C909	*12	J903	P6	PIN0051 E12	PIN0238 O2	R302	18	R553	C5	R7V5	C2	R934	M12	
C210	15	C381	O7	C733	P4	C910	*12	J904	P6	PIN0052 H4	PIN0244 K7	R303	18	R554	C9	R7V6	C2	R935	N10	
C211	14	C500	C11	C751	P2	C911	P8	J905	P7	PIN0055 D11	PIN0245 B8	R304	J8	R555	C9	R7V7	C2	R936	O11	
C212	14	C501	C11	C752	P2	C912	P8	J906	P7	PIN0056 E11	PIN0246 B8	R305	J8	R556	C5	R7V8	B2	R939	O11	
C213	14	C502	C12	C7M1	P2	C913	P8	J907	P7	PIN0057 E10	PIN0247 D11	R306	J8	R557	G1	R7V9	B2	R940	N11	
C214	15	C503	D12	C7M2	P2	C914	P7	J908	O11	PIN0058 D10	PIN0249 D11	R307	J5	R558	C9	R801	L8	R941	09	
C215	H4	C504	C12	C7M3	P2	C915	P8	J909	O11	PIN0059 E10	PIN0250 C5	R308	J5	R559	C9	R802	L9	R942	09	
C217	15	C505	C9	C7M4	P2	C916	P7	J910	O11	PIN0060 C5	PIN0251 D9	R309	J5	R560	C5	R803	L10	R943	N11	
C300	J6	C506	E10	C7M5	P2	C917	P7	J911	N12	PIN0061 D9	PIN0252 O3	R310	J5	R561	E10	R804	K9	R944	09	
C301	19	C507	E12	C7M6	O2	C918	P7	J912	N11	PIN0062 E10	PIN0253 O9	R311	J7	R562	E10	R805	K9	R945	L11	
C302	18	C508	O10	C7M7	P2	C919	N8	J901	P8	PIN0063 K2	PIN0254 O9	R312	J7	R563	N4	R806	K9	R956	P7	
C303	J9	C509	O11	C751	O2	C320	N8	J902	P7	PIN0064 K3	PIN0255 O9	R313	J6	R564	E12	R807	J9	R959	M11	
C304	18	C510	N10	C752	O2	C321	H7	J903	P6	PIN0065 K3	PIN0256 O9	R315	J7	R565	E12	R808	K9	R961	O10	
C305	J8	C511	O11	C753	N2	C322	H7	L201	13	PIN0066 M5	PIN0257 O9	R316	16	R566	N4	R809	K9	R963	N8	
C306	J8	C512	O11	C7V1	C3	C323	N6	L300	J6	PIN0067 M5	PIN0263 H10	R317	16	R567	E10	R810	K8	R964	N10	
C307	18	C513	E10	C7V2	C2	C324	O5	L302	K5	PIN0068 N4	PIN0264 N10	R320	J8	R570	B8	R811	K8	R967	K7	
C308	J7	C514	O11	C7V3	C2	C325	M12	L303	16	PIN0069 N4	PIN0265 N11	R321	J8	R575	O3	R812	K8	R968	T12	
C309	J8	C515	C11	C7V4	C2	C326	H7	L305	17	PIN0070 K8	PIN0266 E7	R322	J7	R576	O3	R821	K8	R969	K2	
C310	J7	C516	B9	C7V5	C2	C327	O8	L306	G7	PIN0071 K8	PIN0267 E7	R323	J7	R577	O2	R822	K8	R970	O5	
C312	J5	C517	D10	C802	K8	C328	L18	L307	H8	PIN0073 K8	PIN0268 C5	R324	J7	R578	O2	R823	K8	R971	C9	
C313	K6	C518	D10	C803	K8	C329	O9	L308	G9	PIN0075 K8	PIN0269 C9	R325	17	R579	C10	R824	K8	SC901	P10	
C314	K6	C519	H3	C804	K8	C330	O9	L311	19	PIN0076 L8	PIN0277 J10	R329	G8	R580	D10	R825	L10	SW901	P7	
C315	18	C520	B8	C805	K8	C331	O9	L501	D12	PIN0077 L9	PIN0280 D10	R330	G8	R581	C10	R826	L10	U7001	P1	
C316	J8	C521	H3	C806	K8	C332	F11	L503	F5	PIN0078 L9	PIN0283 D10	R331	H8	R582	C10	R827	K8	X301	09	
C317	J7	C523	F11	C807	K8	C333	O11	L504	12	PIN0079 L10	PIN0286 P10	R332	H9	R583	B8	R830	K8	X501	C11	
C319	18	C524	E11	C808	L8	C334	P12	L505	D12	PIN0080 K10	PIN0289 O11	R333	H9	R584	E11	R831	K8	X502	C11	
C320	J7	C525	H4	C809	L9	C335	O11	L506	E9	PIN0081 K9	PIN0292 O10	R337	18	R585	D11	R832	K8	X751	N3	
C321	18	C526	H2	C810	L9	C336	P12	L507	E9	PIN0082 J9	PIN0295 O12	R338	18	R588	E10	R833	K8	Z0501	E9	
C322	18	C527	H2	C811	L9	C337	N11	L701	P3	PIN0084 K8	PIN0298 P12	R339	H8	R592	E9	R834	L8	Z0502	E9	
C323	17	C528	112	C812	L10	C341	N11	L704	N4	PIN0086 K8	PIN0301 O11	R342	H9	R593	E9	R835	J10	Z0503	E9	
C324	18	C530	H12	C813	L10	C342	O11	L705	O4	PIN0088 K8	PIN0304 N5	R350	G8	R594	O9	R836	J10	Z0504	E9	
C325	H7	C534	H1	C814	L10	C343	N11	L7M1	P3	PIN0090 K8	PIN0307 N6	R351	G8	R5A1	C10	R840	L6	Z0801	J10	
C327	17	C535	E12	C815	K10	C345	O10	L7V1	C3	PIN0092 K8	PIN0310 N7	R359	17	R5B3	C5	R841	L6	Z0802	J10	
C328	17	C543	H4	C816	K10	C347	O12	L801	J10	PIN0093 L8	PIN0311 A3	R360	G9	R5B4	O9	R842	L7	Z0901	O10	
C329	H6	C544	H4	C817	K10	C348	O12	L802	K10	PIN0094 L8	PIN0312 A3	R361	G9	R5C5	G1	R843	L7	Z0902	O10	
C331	17	C545	H4	C818	K10	C349	P12	L901	P12	PIN0095 P8	PIN0313 H3	R362	H9	R5C6	B11	R844	M7	Z0903	O10	
C332	H7	C546	H2	C819	K10	C350	O11	L902	O12	PIN0096 P8	PIN0314 H3	R363	H9	R5C7	E12	R845	M7	Z0904	O11	
C335	H7	C547	H4	C820	K10	C351	O12	L903	O12	PIN0097 P7	PIN0315 H11	R364	A9	R5C9	C12	R846	K7	Z0905	P10	
C336	H8	C551	H4	C821	K9	C352	P12	L904	O11	PIN0098 P9	PIN0316 L6	R365	A9	R5K1	H12	R847	K7	Z0906	P10	
C337	H7	C552	B11	C822	K9	C353	O11	L905	O12	PIN0099 P9	PIN0317 D12	R366	A9	R5K2	H12	R848	K7	Z0907	O10	
C338	H8	C553	D12	C823	K9	C354	H12	L906	P12	PIN0100 P9	PIN0318 D12	R367	A9	R5K3	H12	R849	K7	Z0908	O10	
C339	H7	C554	E11	C824	J9	C355	G8	L907	M11	PIN0101 M11	PIN0319 D12	R368	A9	R5K4	H12	R850	K7	Z0909	O10	
C340	H7	C556	E10	C825	J10	C356	B11	L908	P9	PIN0102 M11	PIN0320 D12	R369	A9	R5K5	H12	R851	K7	Z0910	O10	
C342	H8	C557	G1	C826	K9	C357	G1	L909	P9	PIN0103 M11	PIN0321 D12	R370	A9	R5K6	H12	R852	K7	Z0911	O10	
C343	G8	C558	E10	C827	K8	C358	O201	14	L910	O11	PIN0104 M11	PIN0322 D12	R371	A9	R5K7	H12	R853	K7	Z0912	O10
C344	H8	C559	D10	C828	K8	C359	O201	14	L911	K12	PIN0105 M11	PIN0323 D12	R372	A9	R5K8	H12	R854	K7	Z0913	O10
C345	H8	C560	D10	C829	K8	C360	O201	14	L912	O5	PIN0106 M11	PIN0324 D12	R373	A9	R5K9	H12	R855	K7	Z0914	O10
C346	H8	C570	C11	C830	K8	C361	O201	14	L913	O5	PIN0107 M11	PIN0325 D12	R374	A9	R5K10	H12	R856	K7	Z0915	O10
C347	H8	C571	C11	C831	K8	C362	O201	14	L914	O5	PIN0108 M11	PIN0326 D12	R375	A9	R5K11	H12	R857	K7	Z0916	O10
C348	H8	C581	C5	C832	K8	C363	O201	14	L915	O5	PIN0109 M11	PIN0327 D12	R376	A9	R5K12	H12	R858	K7	Z0917	O10
C349	G8	C582	O9	C833	L8	C364	O201	14	L916	O5	PIN0110 M11	PIN0328 D12	R377	A9	R5K13	H12	R859	K7	Z0918	O10
C350	G8	C583	D10	C834	L9	C365	O201	14	L917	O5	PIN0111 M11	PIN0329 D12	R378	A9	R5K14	H12	R860	K7	Z0919	O10
C351	H8	C584	D10	C835	L9	C366	O201	14	L918	O5	PIN0112 M11	PIN0330 D12	R379	A9	R5K15	H12	R861	K7	Z0920	O10
C352	H8	C585	D10	C836	L9	C367	O201	14	L919	O5	PIN0113 M11	PIN0331 D12	R380	A9	R5K16	H12	R862	K7	Z0921	O10
C353	H9	C591	A2	C843	M7	C368	O201	14	L920	O5	PIN0114 M11	PIN0332 D12	R381	A9	R5K17	H12	R863	K7	Z0922	O10
C354	H8	C706	N2	C844	L7	C369	O201	14	L921	O5	PIN0115 M11	PIN0333 D12	R382	A9	R5K18	H12	R864	K7	Z0923	O10
C355	H9	C707	N2	C845	L7	C370	O201	14	L922	O5	PIN0116 M11	PIN0334 D12	R383	A9	R5K19	H12	R865	K7	Z0924	O10
C356	H8	C708	N2	C846	L7	C371	O201	14	L923	O5	PIN0117 M11	PIN0335 D12	R384	A9	R5K20	H12	R866	K7	Z0925	O10
C357	H9	C710	N2	C847	L6	C372	O201	14	L924	O5	PIN0118 M11	PIN0336 D12	R385	A9	R5K21	H12	R867	K7	Z0926	O10
C358	H9	C712	N3	C8C1	M6	C373	O201	14	L925	O5	PIN0119 M11	PIN0337 D12	R386	A9	R5K22	H12	R868	K7	Z0927	O10
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C360	H9	C714	N3	C8C3	K6	C375	O201	14	L927	O5	PIN0121 M11	PIN0339 D12	R388	A9	R5K24	H12	R870	K7	Z0929	O10
C361	H9	C715	N3	C8C4	J7	C376	O201	14	L928	O5	PIN0122 M11	PIN0340 D12	R389	A9	R5K25	H12	R871	K7	Z0930	O10
C362	18	C716	N3	C8C5	M5	C377	O201	14	L929	O5	PIN0123 M11	PIN0341 D12	R390	A9	R5K26	H12	R872	K7	Z0931	O10
C364	110	C717	O4	C8C6	L7	C378	O201	14	L930	O5	PIN0124 M11	PIN0342 D12	R391	A9	R5K27	H12	R873	K7	Z0932	O10
C365	19	C718	O4	C8C7	K7	C379	O201	14	L931	O5	P									

### 1. VCR P.C.BOARD(TOP VIEW)

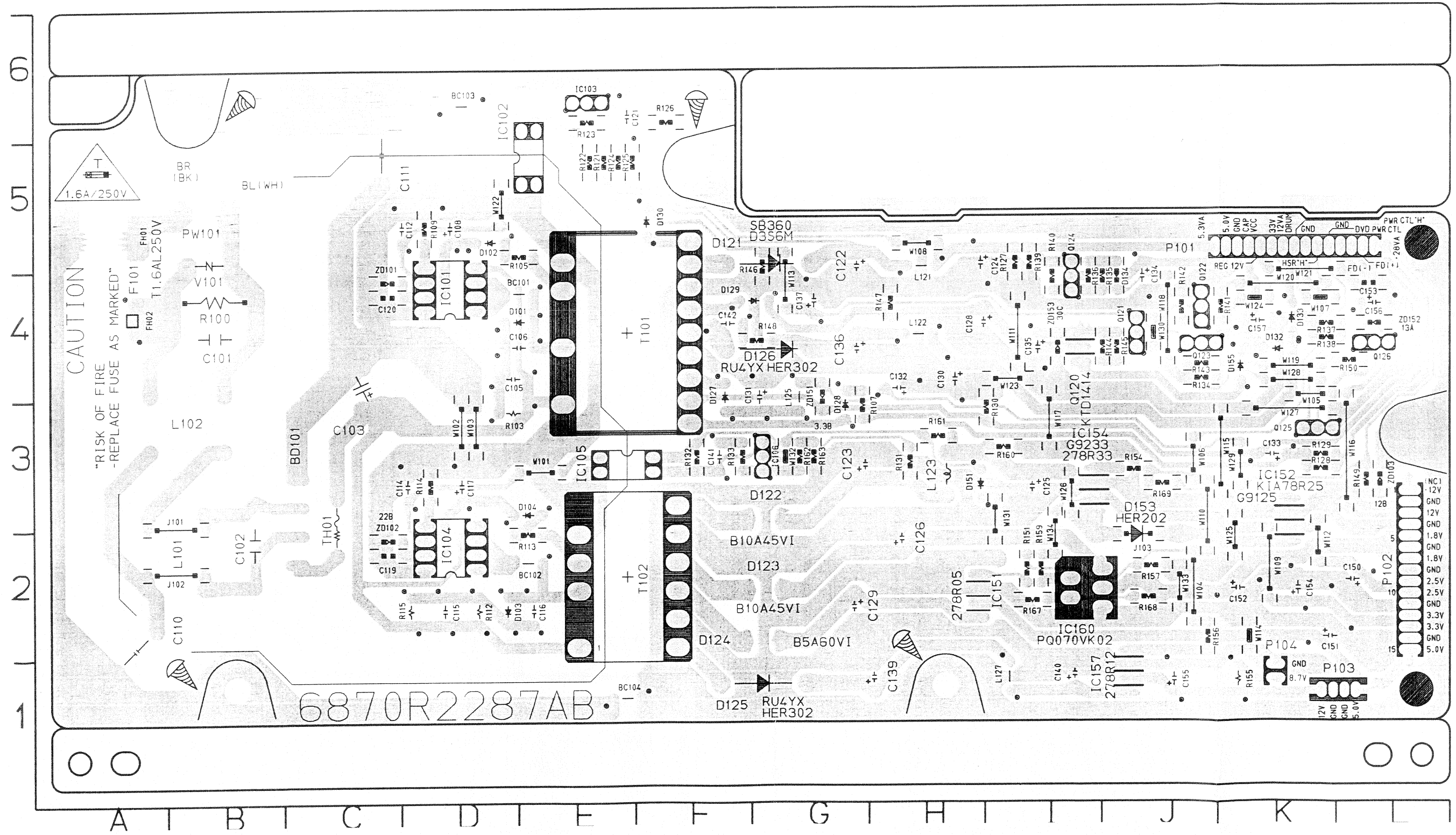




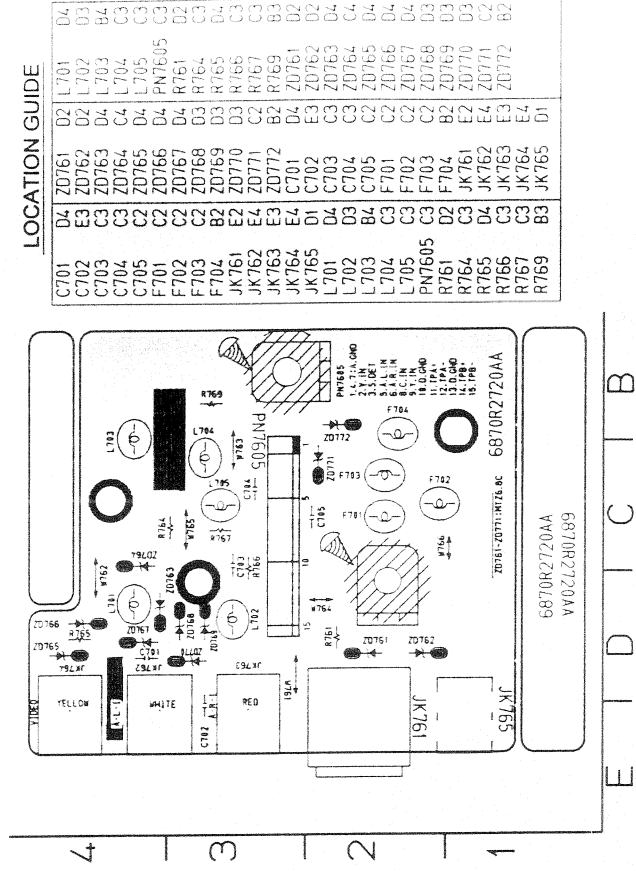
## 2. VCR P.C.BOARD(BOTTOM VIEW)



3. SMPS P.C.BOARD



4. JACK P.C.BOARD



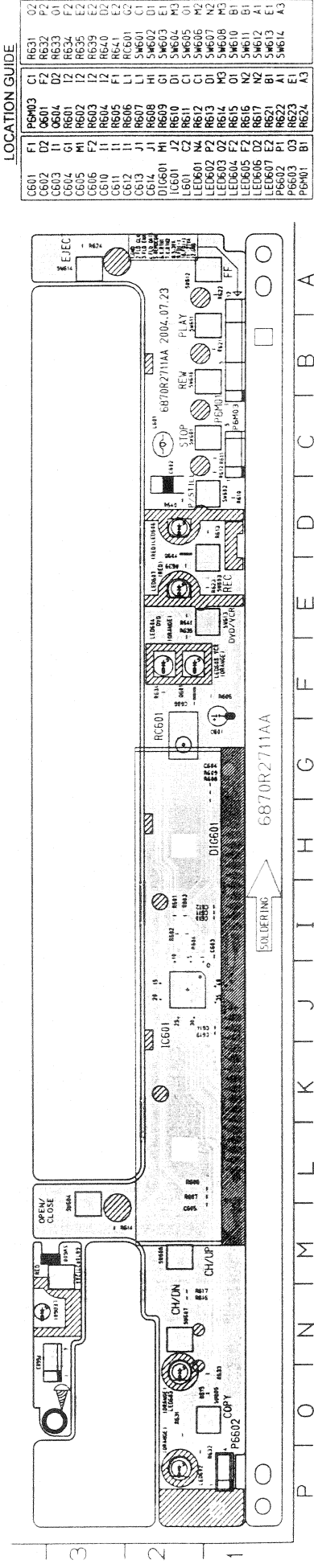
LOCATION GUIDE

BC101	E4	C152	K2	L101	B2	R135	J4
BC102	E2	C153	L4	L102	B3	R136	I4
BC103	D6	C154	K2	L121	H5	R137	K4
BC104	E1	C155	J1	L122	H4	R138	K4
BD101	C3	C156	L4	L123	H3	R139	I5
C102	B2	D101	E4	L125	G3	R140	I4
C103	C4	D102	D5	P101	J5	R141	K4
C105	D4	D103	D2	P102	L3	R142	J4
C106	E4	D104	E3	P103	K1	R143	J4
C108	D5	D121	G3	P104	K1	R144	J4
C110	A2	D122	G3	PW101	B5	R145	G5
C111	C5	D123	G2	O120	I4	R146	H4
C112	D5	D124	G2	O121	J4	R147	H4
C114	D3	D125	G1	Q122	J4	R148	G4
C115	D2	D126	G4	Q123	J4	R149	L3
C116	E2	D127	F3	Q124	I4	R150	L4
C117	D3	D128	G3	Q125	K3	R151	I2
C119	C2	D129	G4	Q126	L4	R152	K1
C120	C4	D130	F5	R100	B4	R153	J2
C122	G5	D132	K4	R103	D3	R154	J2
C123	G3	D133	K4	R105	E5	R155	I2
C124	H5	D134	J4	R107	G3	R156	I3
C125	I3	D153	J2	R109	D5	R157	H3
C126	H2	D155	K4	R112	D2	R158	G3
C128	H4	FH01	A5	R113	E2	R159	I2
C129	G2	FH02	A4	R114	D3	R160	I2
C130	H4	IC101	D4	R115	D2	R161	J2
C131	G3	IC102	E6	R116	E5	R162	J3
C132	H4	IC103	E6	R117	D3	R163	E4
C133	K3	IC104	D2	R118	D3	R164	E4
C134	J4	IC105	F3	R119	D3	R165	E4
C135	I4	IC106	G3	R120	D3	R166	E4
C136	G4	IC151	H2	R121	D3	R167	E4
C137	G4	IC152	K2	R122	D3	R168	E4
C139	H1	IC154	I3	R123	D3	R169	E4
C140	I1	IC157	J1	R124	D3	R170	E4
C141	F3	IC160	I2	R125	D3	R171	E4
C142	F4	J101	B3	R126	D3	R172	E4
C150	L2	J102	B2	R127	D3	R173	E4
C151	K2	J103	J2	R128	D3	R174	E4

3-65

3-66

5. KEY & TIMER P.C.BOARD

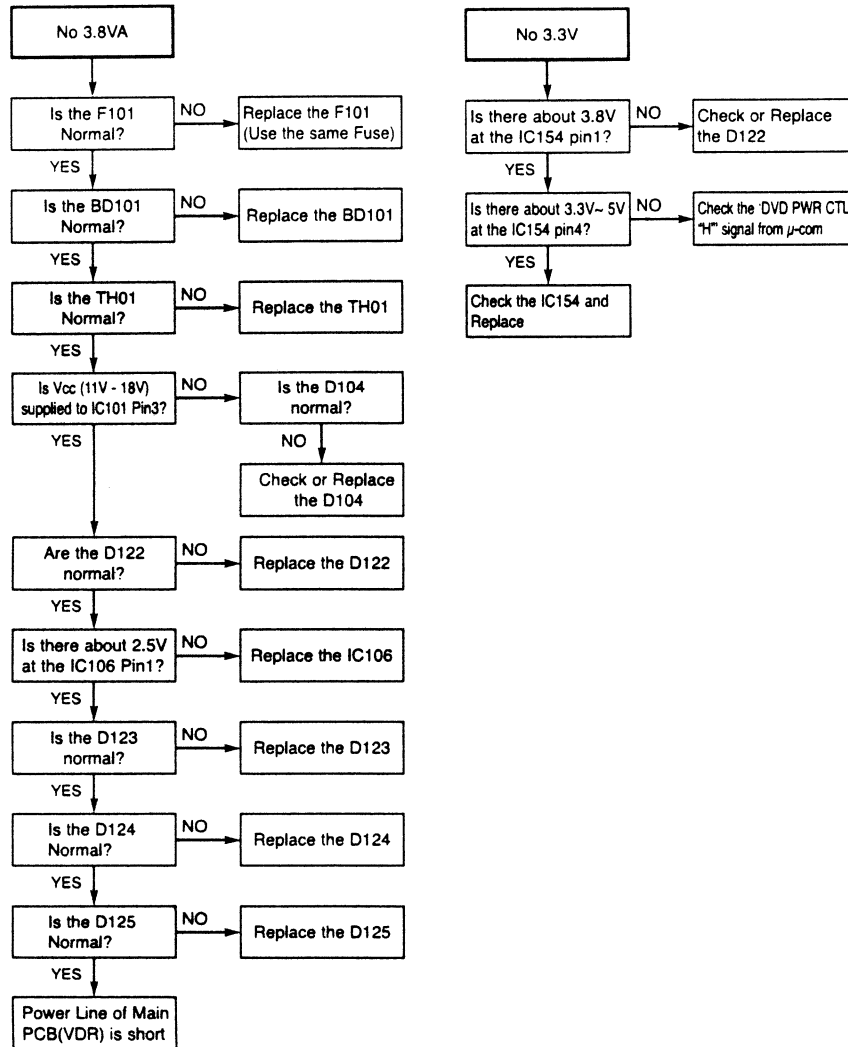


3-67

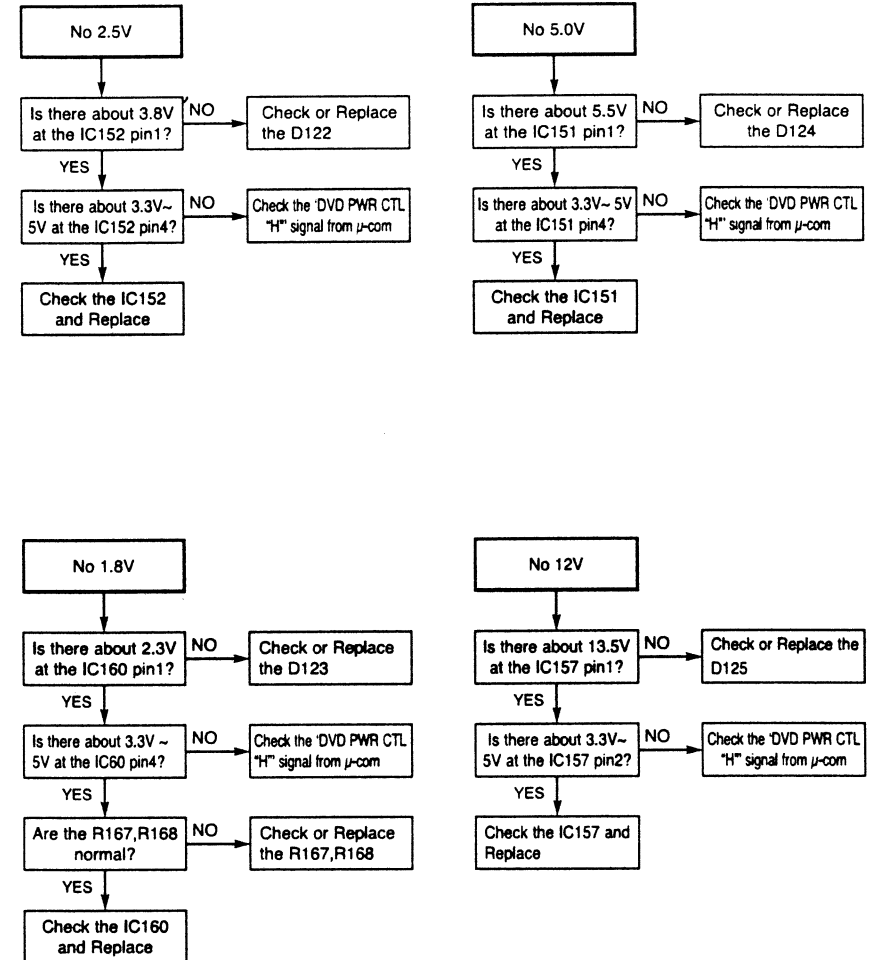
3-68

## VDR PART VDR ELECTRICAL TROUBLESHOOTING GUIDE

### 1. Power(SMPS) CIRCUIT

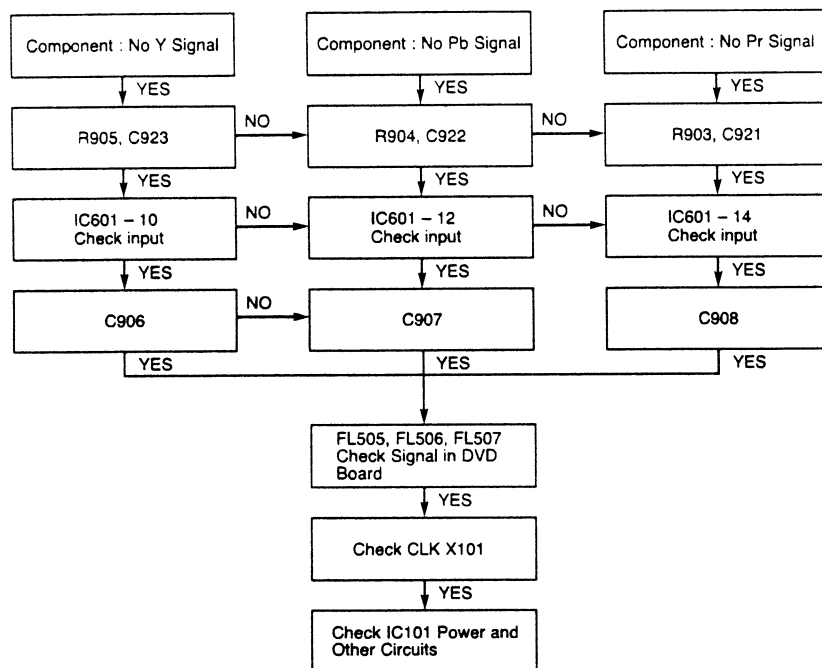


## VDR ELECTRICAL TROUBLESHOOTING GUIDE



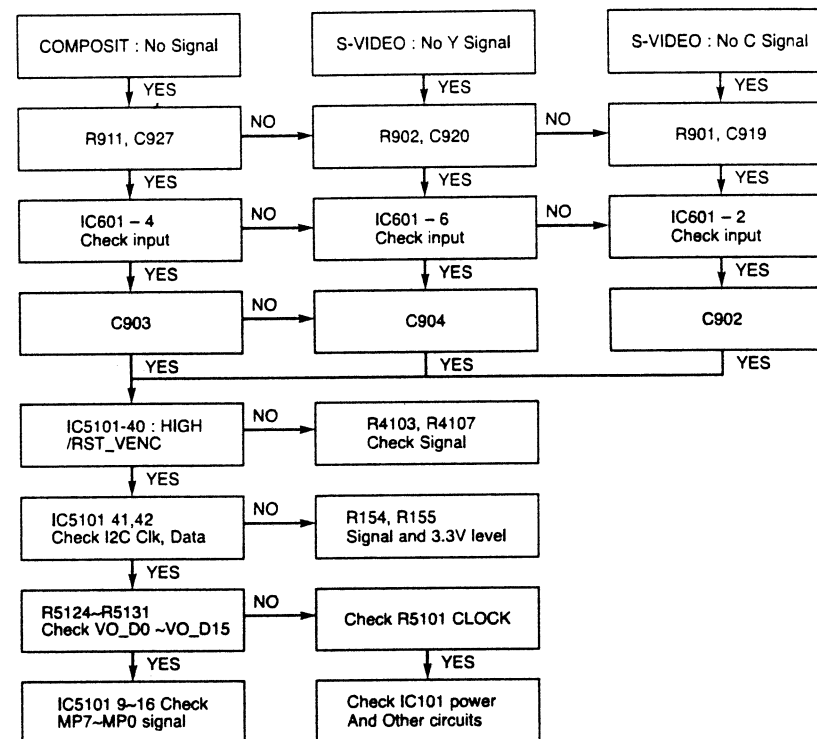
## VDR ELECTRICAL TROUBLESHOOTING GUIDE

### 2. No Component video signal when playing DISC



## VDR ELECTRICAL TROUBLESHOOTING GUIDE

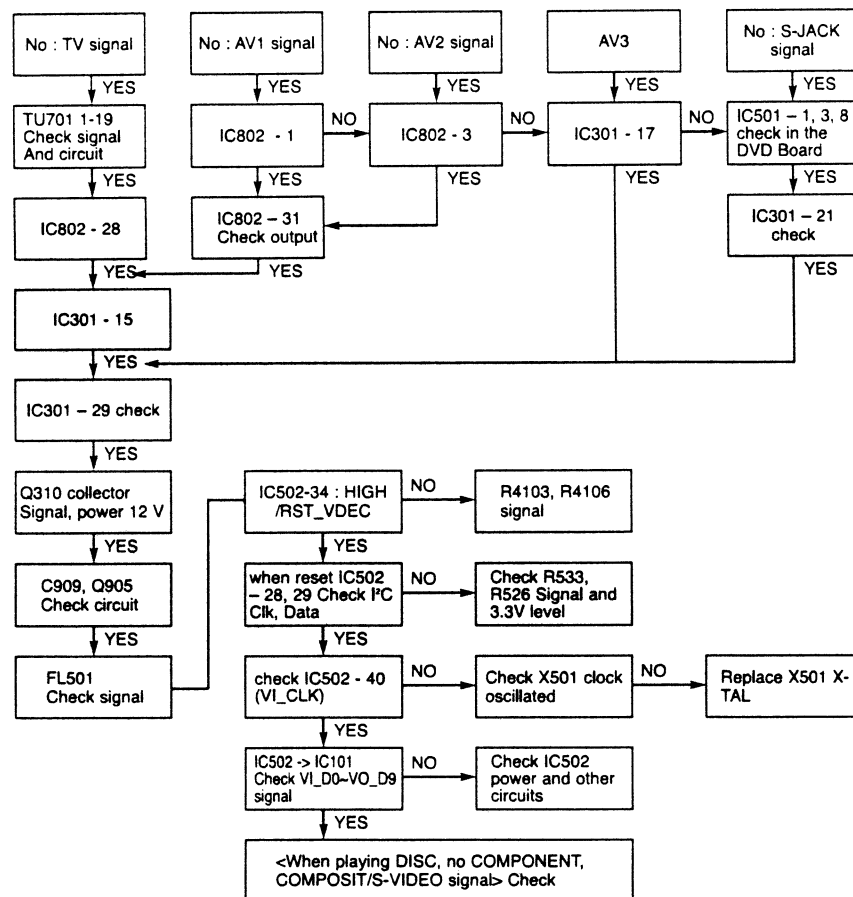
### 3. No COMPOSITE / S-VIDEO signal when playing DISC





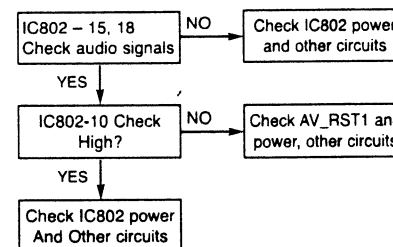
## VDR ELECTRICAL TROUBLESHOOTING GUIDE

### 4. No TV, External Input video signal

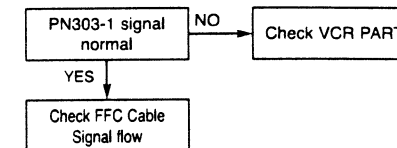


## VDR ELECTRICAL TROUBLESHOOTING GUIDE

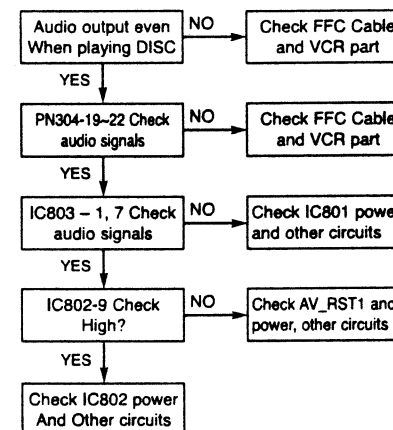
### 5. When playing DISC, no audio output



### 7. No OPTICAL / DIGITAL output

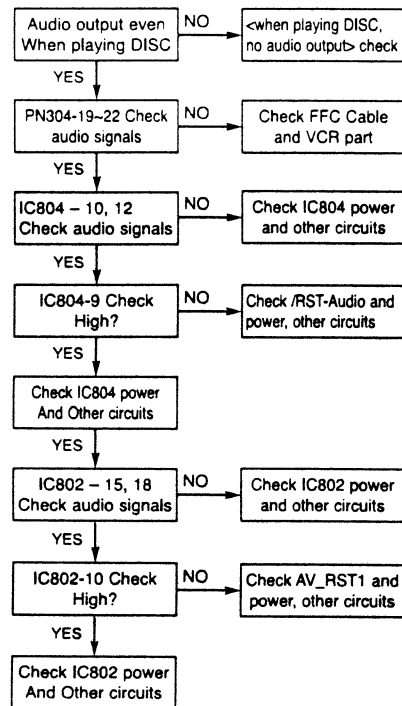


### 6. No TUNER audio output

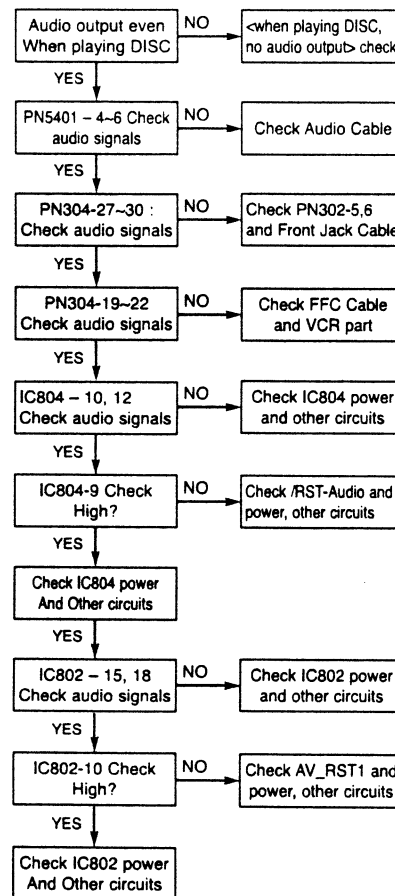


## VDR ELECTRICAL TROUBLESHOOTING GUIDE

### 8. No External Input 1, 2 audio

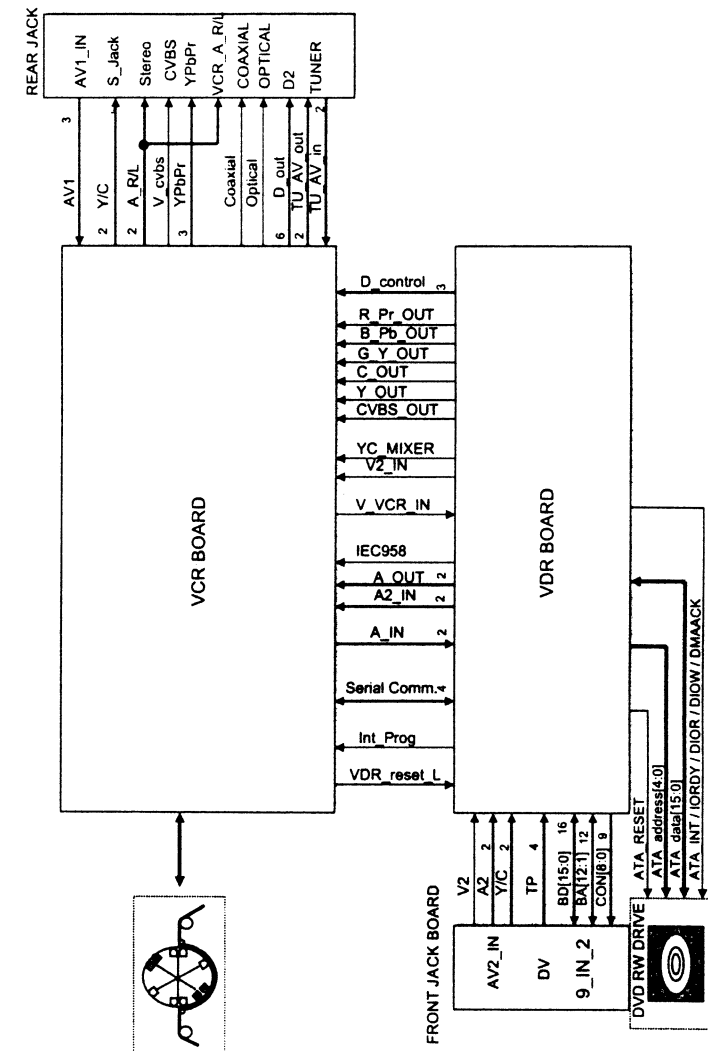


### 9. No External Input 3 audio

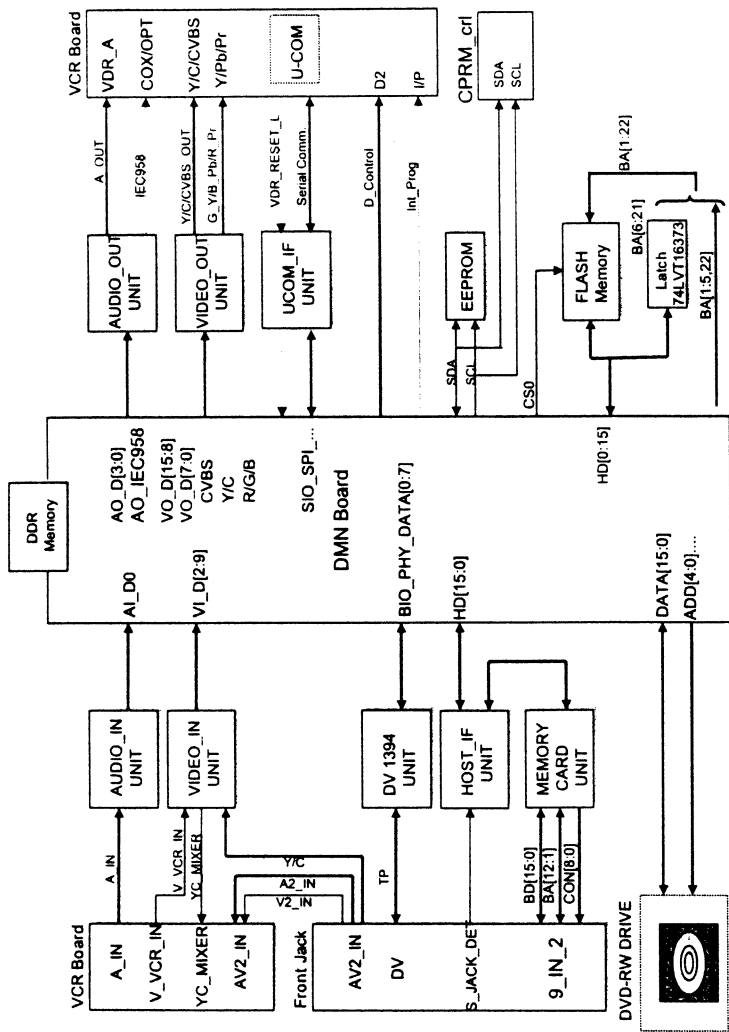


## BLOCK DIAGRAMS

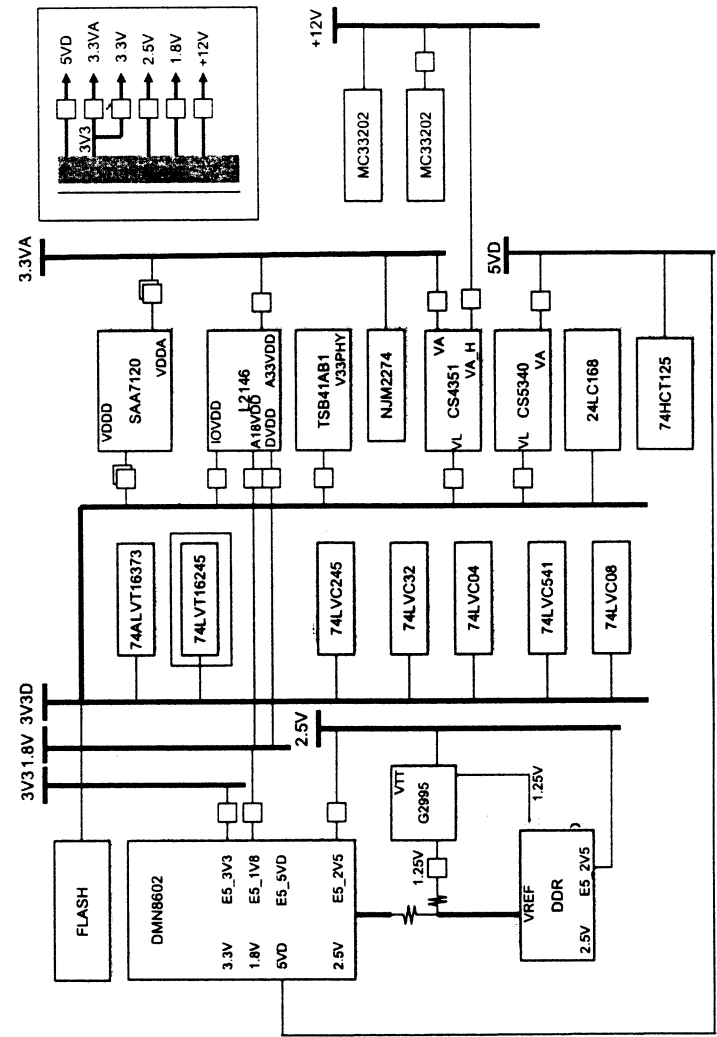
### 1. VDR SET TOTAL BLOCK DIAGRAM



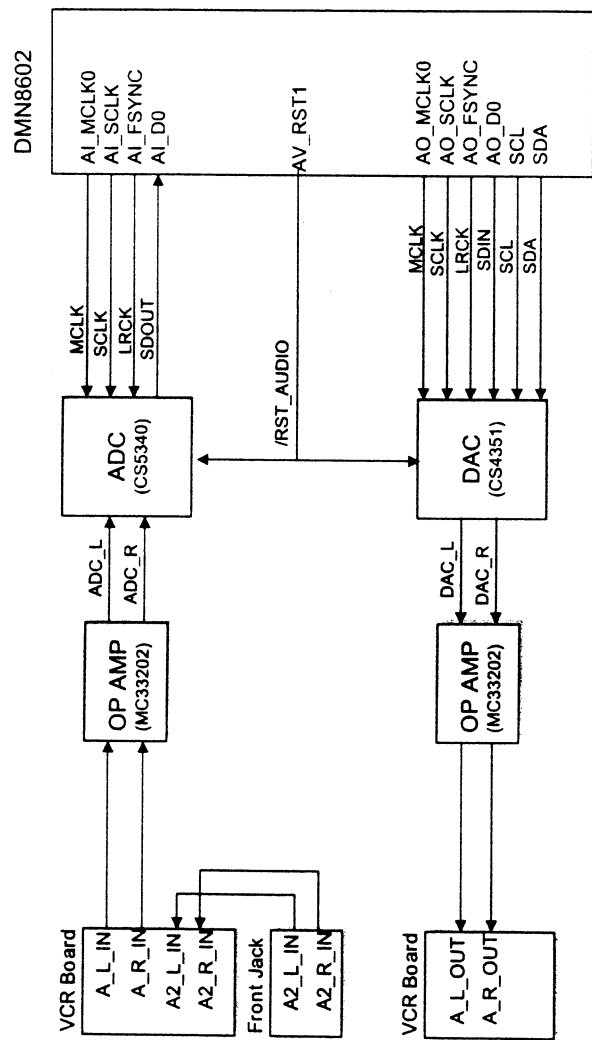
2. VDR MAIN H/ W BLOCK DIAGRAM



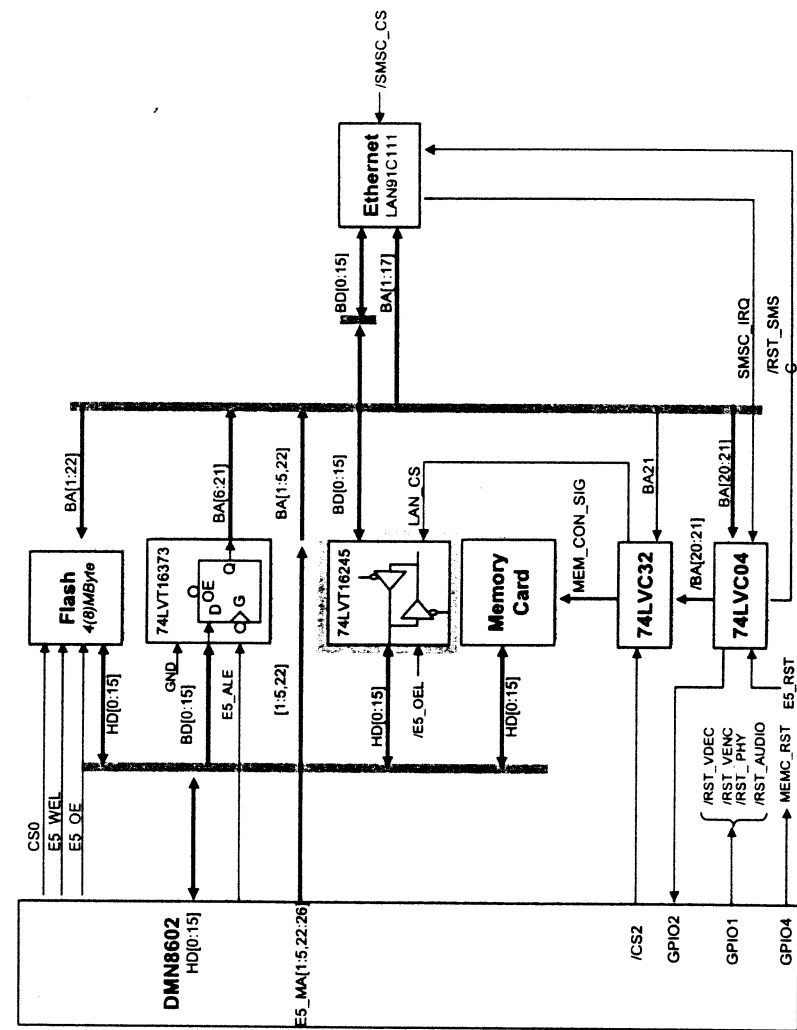
3. POWER BLOCK DIAGRAM



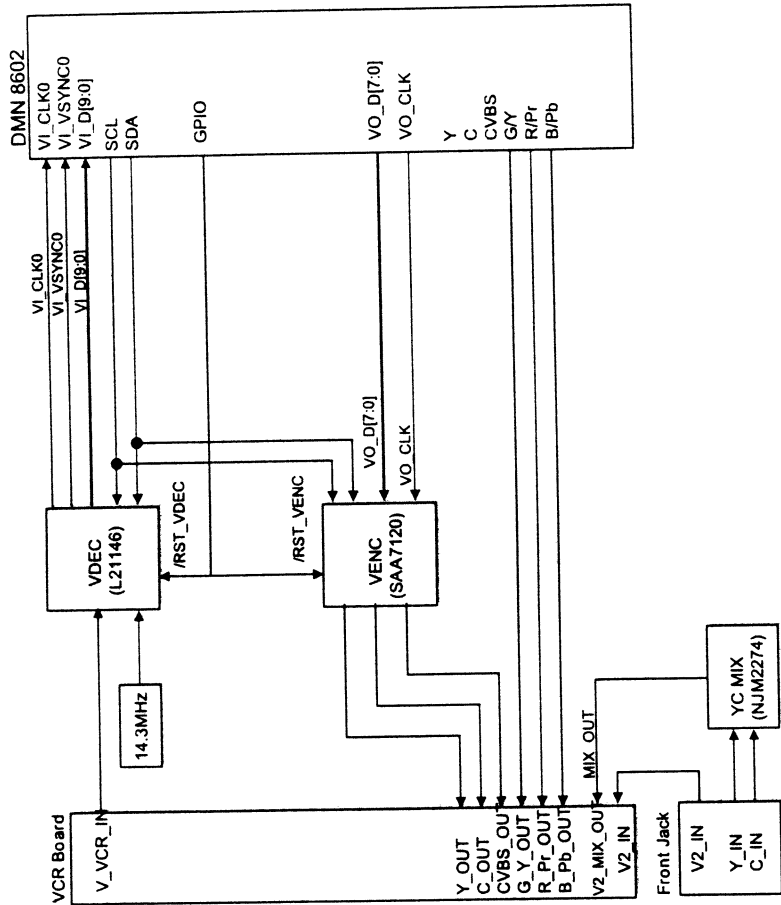
4. AUDIO IN/ OUT BLOCK DIAGRAM



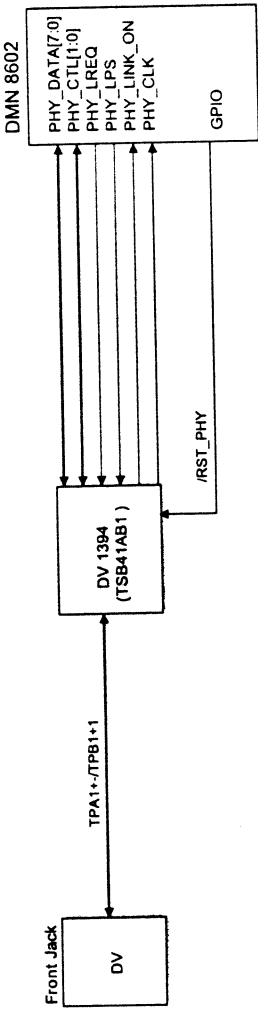
5. CPU & CONTROL REGISTER BLOCK DIAGRAM



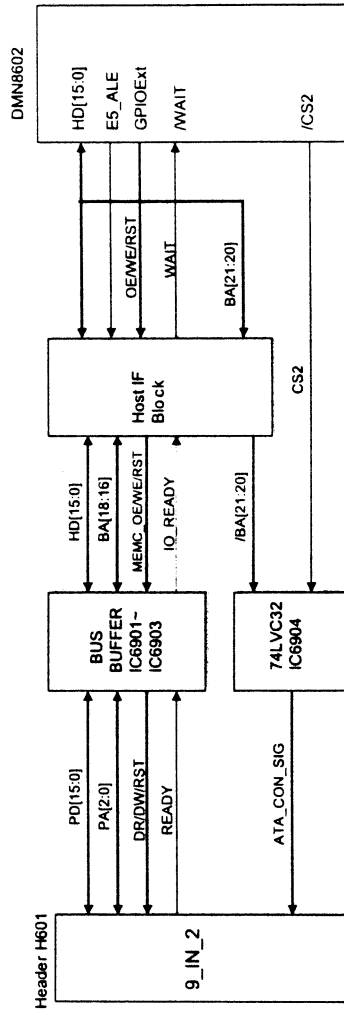
6. VIDEO IN/ OUT BLOCK DIAGRAM



7. DV 1394 IN/OUT BLOCK DIAGRAM

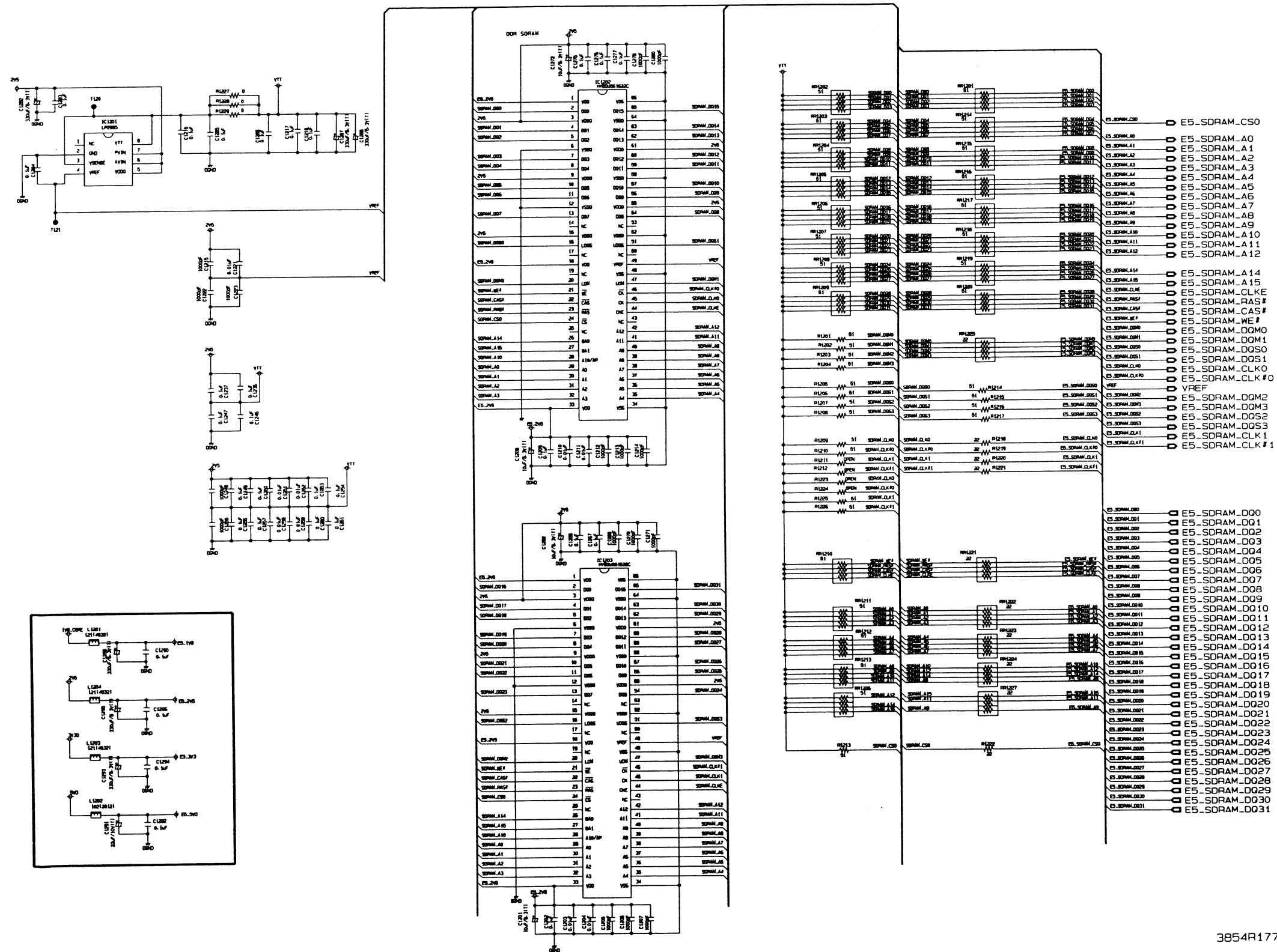


## 8. MEMORY CARD IN/ OUT BLOCK DIAGRAM



MEMO

## 2. DDR & B TO B CONNECTOR CIRCUIT DIAGRAM



## 1. BGA 308P CIRCUIT DIAGRAM

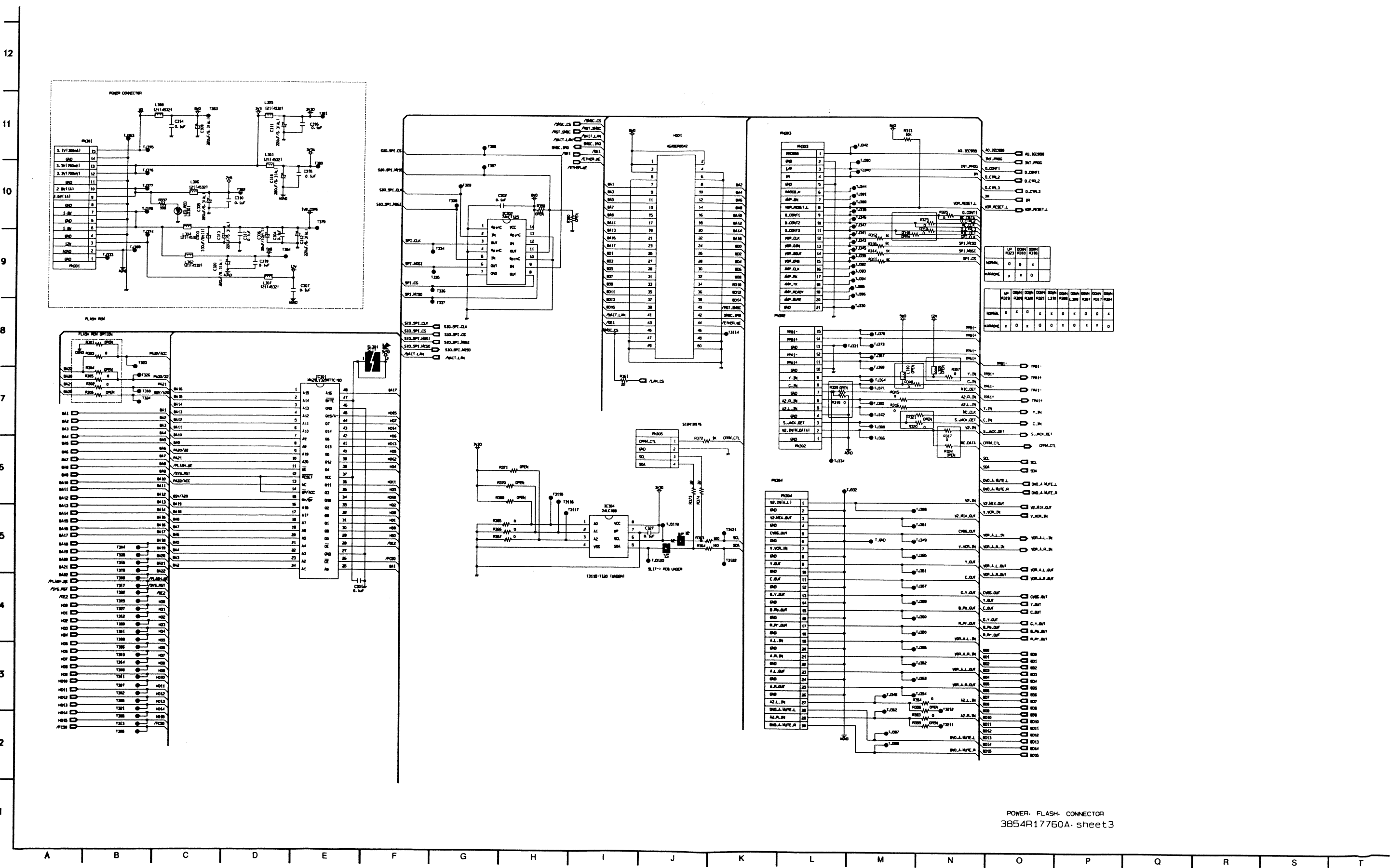




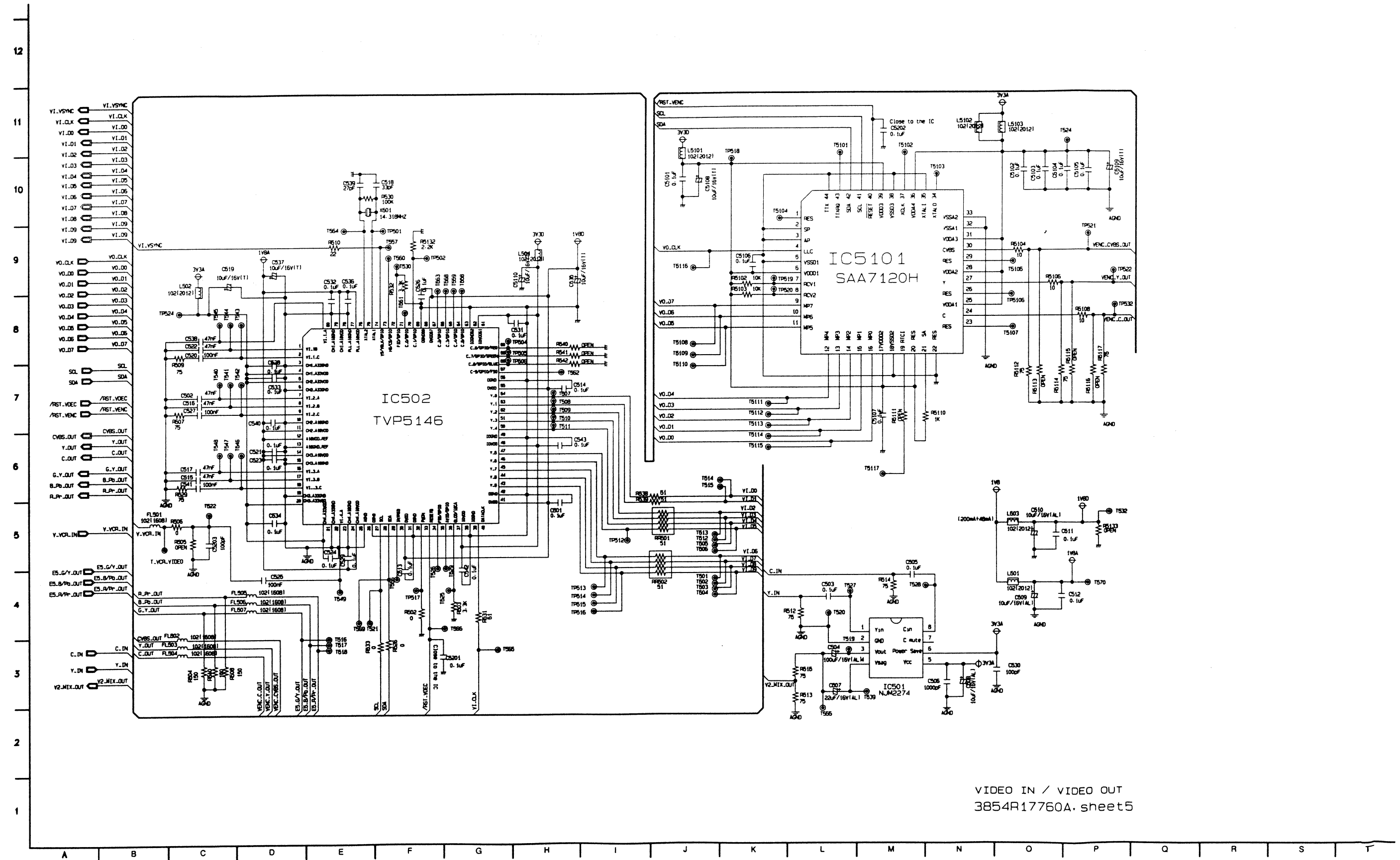
12  
11  
10  
9  
8  
7  
6  
5  
4  
3  
2  
1



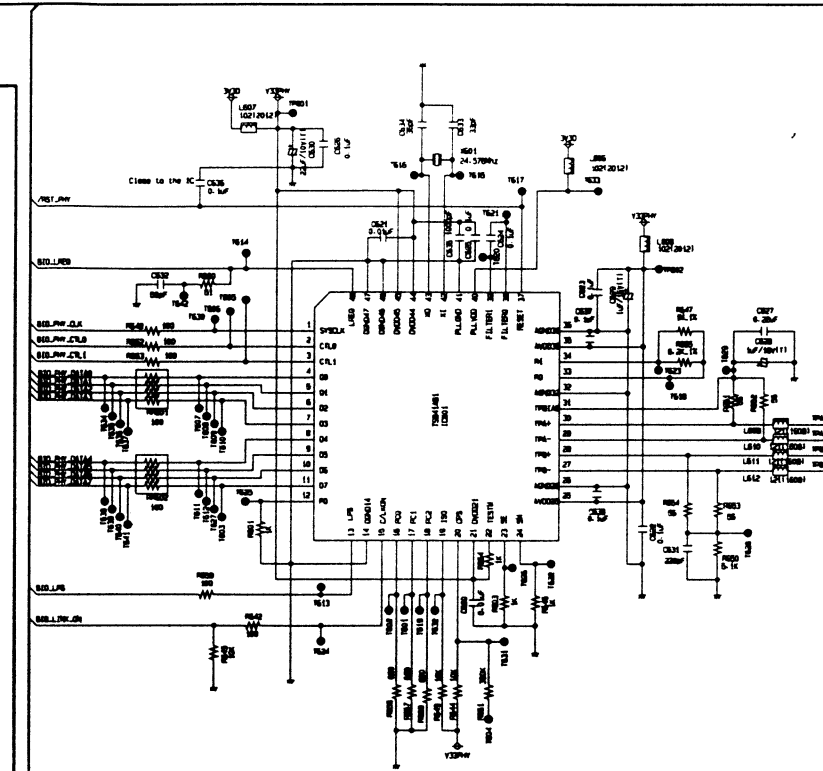
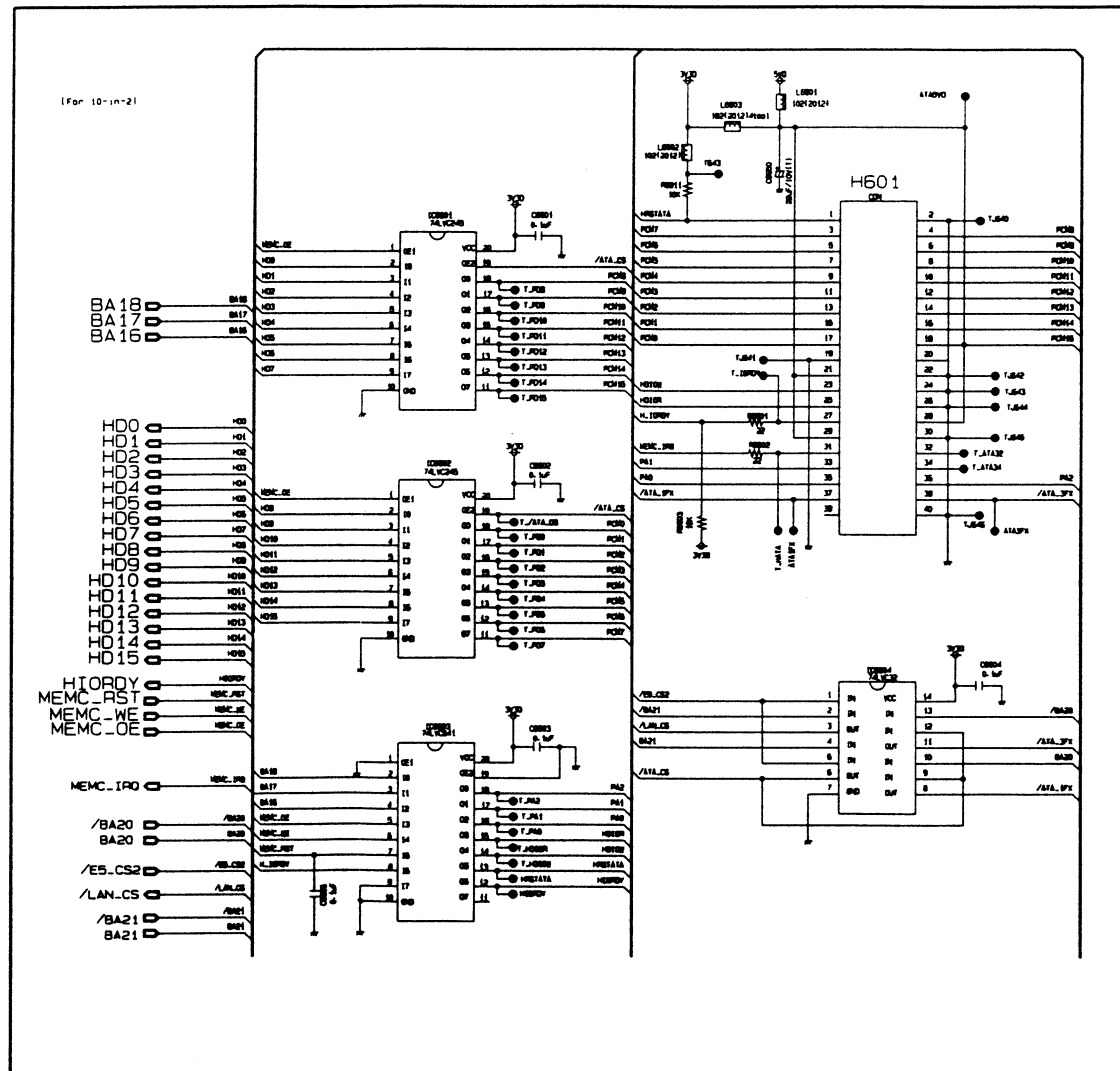
3. POWER, FLASH, CONNECTOR CIRCUIT DIAGRAM



# 5. VIDEO\_IN, VIDEO\_OUT CIRCUIT DIAGRAM

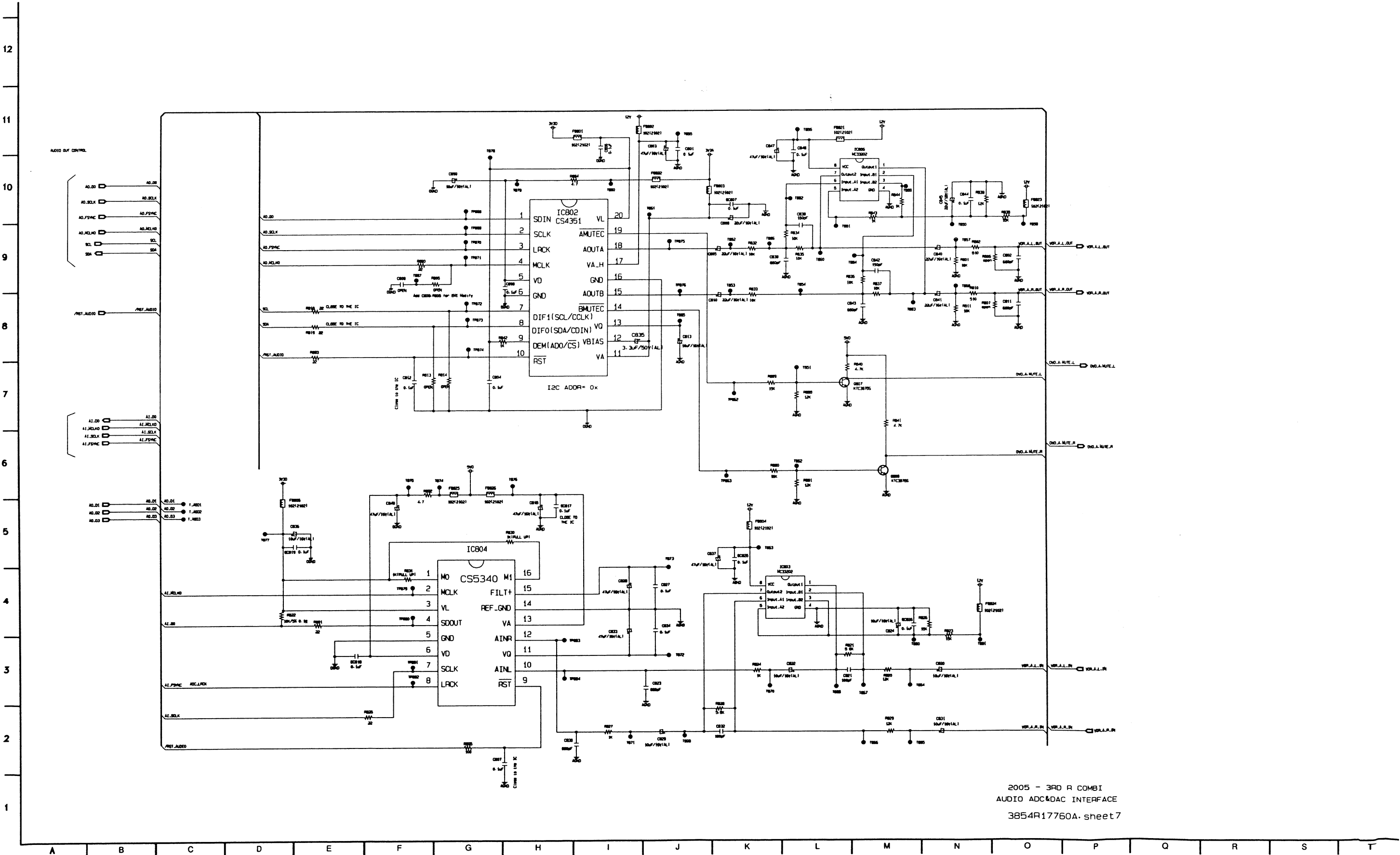


A vertical scale with numbers 1 through 12. Each number is positioned to the left of a horizontal tick mark that extends to the right. The numbers are arranged in ascending order from bottom to top.



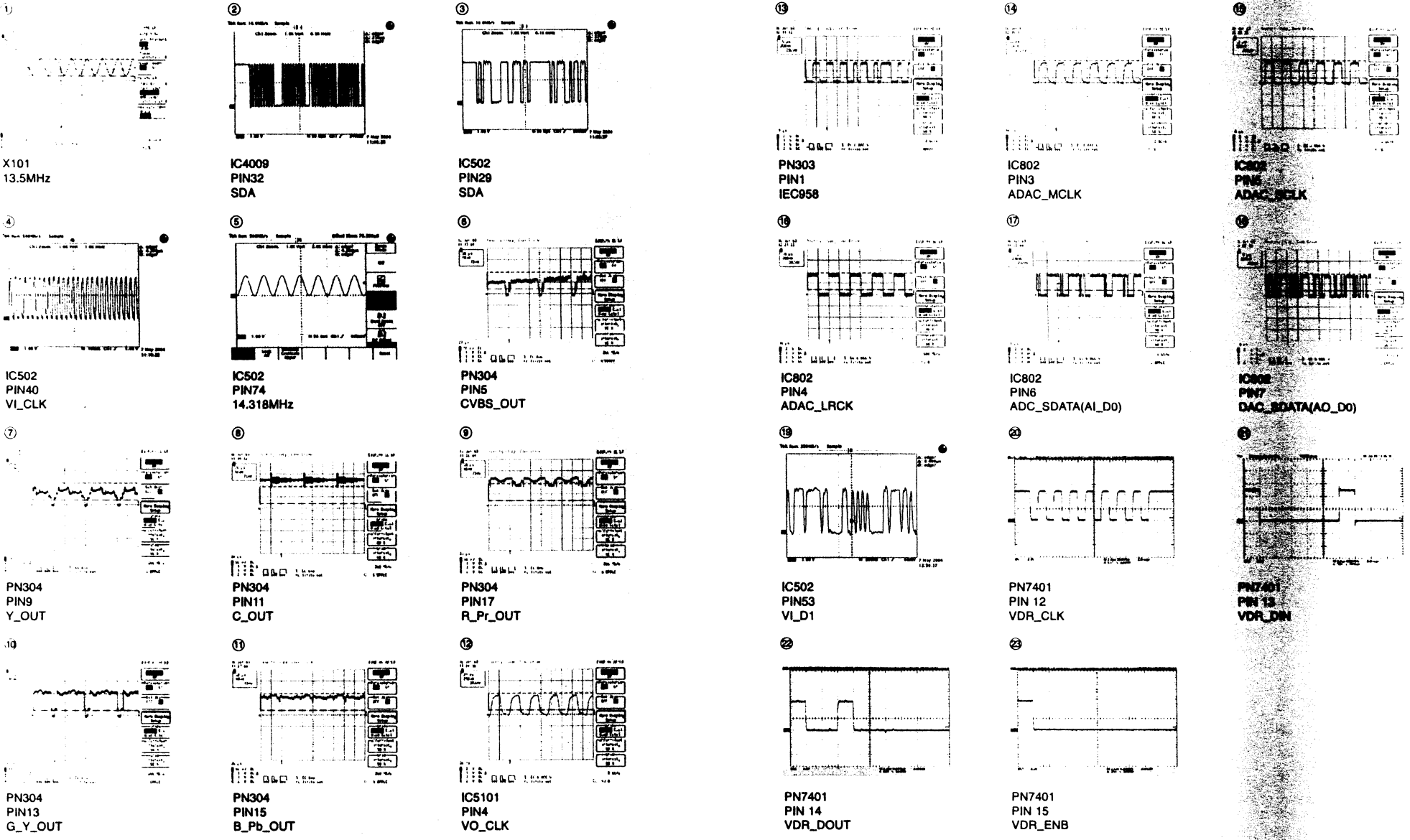
3854R17760A. sheet6

7. AUDIO IN/OUT CIRCUIT DIAGRAM



2005 - 3RD R COMBI  
AUDIO ADC&DAC INTERFACE  
3854R17760A. sheet 7

• WAVEFORMS



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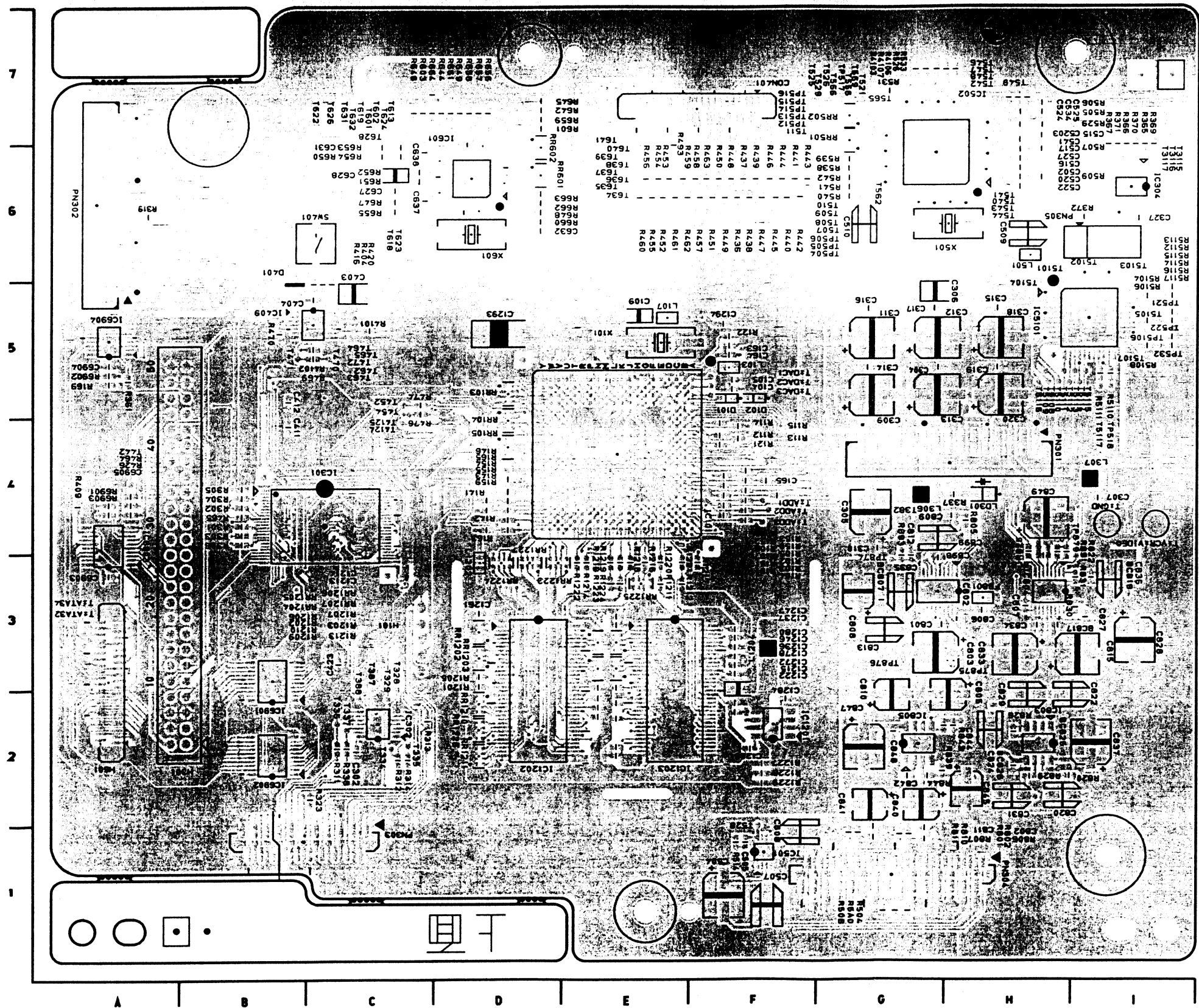
3-99

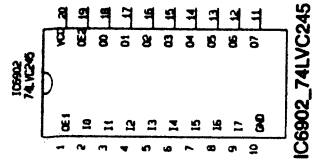
• CIRCUIT VOLTAGE CHART

MODE PIN NO.	EE	PB	REC	MODE PIN NO.	EE	PB	REC	MODE PIN NO.	EE	PB	REC	MODE PIN NO.	EE	PB	REC	MODE PIN NO.	EE	PB	REC	MODE PIN NO.	EE	PB	REC	MODE PIN NO.	EE	PB	REC	MODE PIN NO.	EE	PB	REC								
IC1201				IC302				IC401				IC402				IC403				IC404				IC405				IC406				IC407				IC408			
1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0								
2	0	0	0	2	3.14	3.29	3.27	2	3.14v	3.32	3.32	2	3.14v	3.32	3.32	2	3.14	3.29	3.29	2	3.14	3.29	3.29	2	3.14	3.29	3.29	2	3.14	3.29	3.29								
3	1.02	1.02	1.23	3	4.88	4.96	4.96	3	4.88	5.00	5.00	3	4.88	5.00	5.00	3	4.88	5.00	5.00	3	4.88	5.00	5.00	3	4.88	5.00	5.00	3	4.88	5.00	5.00								
4	1.02	1.01	1.23	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0								
5	2.37	2.48	2.47	5	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0								
6	2.34	2.48	2.47	6	4.88	0.01	0.01	6	4.88	0.01	0.01	6	4.88	0.01	0.01	6	4.88	0.01	0.01	6	4.88	0.01	0.01	6	4.88	0.01	0.01	6	4.88	0.01	0.01								
7	2.34	2.48	2.47	7	0	0	0	7	0	0	0	7	0	0	0	7	0	0	0	7	0	0	0	7	0	0	0	7	0	0	0								
8	1.08	1.22	1.22	8	4.94	3.97	3.97	8	4.94	3.97	3.97	8	4.94	3.97	3.97	8	4.94	3.97	3.97	8	4.94	3.97	3.97	8	4.94	3.97	3.97	8	4.94	3.97	3.97								
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1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0								
2	3.14	3.29	3.27	2	3.14	3.32	3.32	2	3.14v	3.32	3.32	2	3.14v	3.32	3.32	2	3.14	3.29	3.29	2	3.14	3.29	3.29	2	3.14	3.29	3.29	2	3.14	3.29	3.29								
3	4.88	4.96	4.96	3	4.88	5.00	5.00	3	4.88	5.00	5.00	3	4.88	5.00	5.00	3	4.88	5.00	5.00	3	4.88	5.00	5.00	3	4.88	5.00	5.00	3	4.88	5.00	5.00								
4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0								
5	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0								
6	4.88	0.01	0.01	6	4.88	0.01	0.01	6	4.88	0.01	0.01	6	4.88	0.01	0.01	6	4.88	0.01	0.01	6	4.88	0.01	0.01	6	4.88	0.01	0.01	6	4.88	0.01	0.01								
7	0	0	0	7	0	0	0	7	0	0	0	7	0	0	0	7	0	0	0	7	0	0	0	7	0	0	0	7	0	0	0								
8	4.94	3.97	3.97	8	4.94	3.97	3.97	8	4.94	3.97	3.97	8	4.94	3.97	3.97	8	4.94	3.97	3.97	8	4.94	3.97	3.97	8	4.94	3.97	3.97	8	4.94	3.97	3.97								
9	3.22	2.64	2.64	9	3.22	2.64	2.64	9	3.22	2.64	2.64	9	3.22	2.64	2.64	9	3.22	2.64	2.64	9	3.22	2.64	2.64	9	3.22	2.64	2.64	9	3.22	2.64	2.64								
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11	4.88	4.2	4.2	11	4.88	4.2	4.2	11	4.88	4.2	4.2	11	4.88	4.2	4.2	11	4.88	4.2	4.2	11	4.88	4.2	4.2	11	4.88	4.2	4.2	11	4.88	4.2	4.2								
12	4.96	4.3	4.3	12	4.96	4.3	4.3	12	4.96	4.3	4.3	12	4.96	4.3	4.3	12	4.96	4.3	4.3	12	4.96	4.3	4.3	12	4.96	4.3	4.3	12	4.96	4.3	4.3								
13	0	0	0	13	0	0	0	13	0	0	0	13	0	0	0	13	0	0	0	13	0	0	0	13	0	0	0	13	0	0	0								
14	4.84	4.97	4.97	14	4.84	4.97	4.97	14	4.84	4.97	4.97	14	4.84	4.97	4.97	14	4.84	4.97	4.97	14	4.84	4.97	4.97	14	4.84	4.97	4.97	14	4.84	4.97	4.97								
IC401				IC402				IC403				IC404				IC405				IC406				IC407				IC408											
1	3.14v	3.29	3.29	1	3.14v	3.32	3.32	1	3.14v	3.32	3.32	1	3.14v	3.32	3.32	1	3.14	3.29	3.29	1	3.14	3.29	3.29	1	3.14	3.29	3.29	1	3.14	3.29	3.29								
2	3.14v	3.32	3.32	2	3.14v	3.32	3.32	2	3.14v	3.32	3.32	2	3.14v	3.32	3.32	2	3.14	3.29	3.29	2	3.14	3.29	3.29	2	3.14	3.29	3.29	2	3.14	3.29	3.29								
3	3.14v	3.29	3.29	3	3.14v	3.29	3.29	3	3.14v	3.29	3.29	3	3.14v	3.29	3.29	3	3.14	3.29	3.29	3	3.14	3.29	3.29	3	3.14	3.29	3.29	3	3.14	3.29	3.29								
4	0.04	0.04	0	4	0.04	0.04	0	4	0.04	0.04	0	4	0.04	0.04	0	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0								
5	0	0.04	0	5	0	0.04	0	5	0	0.04	0	5	0	0.04	0	5	0	0	0	5	0	0	0	5	0	0	0	5	0	0	0								
6	0	0	0	6	0	0	0	6	0	0	0	6	0	0	0	6	0	0	0	6	0	0	0	6	0	0	0	6	0	0	0								
7	0	0	0	7	0	0	0	7	0	0	0	7	0	0	0	7	0	0	0	7	0	0	0	7	0	0	0	7	0	0	0								
8	3.14	3.29	3.29	8	3.14	3.29	3.29	8	3.14	3.29	3.29	8	3.14	3.29	3.29	8	3.14	3.29	3.29	8	3.14	3.29	3.29	8	3.14	3.29	3.29	8	3.14	3.29	3.29								
9	3.14	5.00	5.9	9	3.14	5.00	5.9	9	3.14	5.00	5.9	9	3.14	5.00	5.9	9	3.14	5.00	5.9	9	3.14	5.00	5.9	9	3.14	5.00	5.9	9	3.14	5.00	5.9								
10	3.14	3.29	3.29	10	3.14	3.29	3.29	10	3.14	3.29	3.29	10	3.14	3.29	3.29	10	3.14	3.29	3.29	10	3.14	3.29	3.29	10	3.14	3.29	3.29	10	3.14	3.29	3.29								
11	3.14	3.29	3.29	11	3.14	3.29	3.29	11	3.14	3.29	3.29	11	3.14	3.29	3.29	11	3.14	3.29	3.29	11	3.14	3.29	3.29	11	3.14	3.29	3.29	11	3.14	3.29	3.29								
12	4.98	5.00	5.00	12	4.98	5.00	5.00	12	4.98	5.00	5.00	12	4.98	5.00	5.00	12	4.98	5.00	5.00	12	4.98	5.00	5.00	12	4.98	5.00	5.00	12	4.98	5.00	5.00								
13	3.14	3.29	3.29	13	3.14	3.29	3.29	13	3.14	3.29	3.29	13	3.14	3.29	3.29	13	3.14	3.29	3.29	13	3.14	3.29	3.29	13	3.14	3.29	3.29	13	3.14	3.29	3.29								
14	3.14	3.29	3.29	14	3.14	3.29	3.29	14	3.14	3.29	3.29	14	3.14	3.29	3.29	14	3.14	3.29	3.29	14	3.14	3.29	3.29	14	3.14	3.29	3.29	14	3.14	3.29	3.29								
IC402				IC403				IC404				IC405				IC406				IC407				IC408															
1	3.28	3.28	3.29	1	3.28	3.28	3.29	1	3.28	3.28	3.29	1	3.28	3.28	3.29	1	3.28	3.28	3.29	1	3.28	3.28	3.29	1	3.28	3.28	3.29	1	3.28	3.28	3.29								
2	3.31	0.19	0.19	2	3.31	0.19	0.19	2	3.31	0.19	0.19	2	3.31	0.19	0.19	2	3.31	0.19	0.19	2	3.31	0.19	0.19	2	3.31	0.19	0.19	2	3.31	0.19	0.19								
3	3.22	0.19	0.19	3	3.22	0.19	0.19	3	3.22	0.19	0.19	3	3.22	0.19	0.19	3	3.22	0.19	0.19	3	3.22	0.19	0.19	3	3.22	0.19	0.19	3	3.22	0.19	0.19								
4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0								
5	0.19	0.19	0.19	5	0.19	0.19	0.19	5	0.19	0.19	0.19	5	0.19	0.19	0.19	5	0.19	0.19	0.19	5	0.19	0.19	0.19	5	0.19	0.19	0.19	5	0.19	0.19	0.19								
6	0.19	0.19	0.19	6	0.19	0.19	0.19	6	0.19	0.19	0.19	6	0.19	0.19	0.19	6	0.19	0.19	0.19	6	0.19	0.19	0.19	6	0.19	0.19	0.19	6	0.19	0.19	0.19								
7	3.29	3.29	3.29	7	3.29	3.29	3.29	7	3.29	3.29	3.29	7	3.29	3.29	3.29	7	3.29	3.29	3.29	7	3.29	3.29	3.29	7	3.29	3.29	3.29	7	3.29	3.29	3.29								
8	0.19	0.19	0.19	8	0.19	0.19	0.19	8	0.19	0.19	0.19	8	0.19	0.19	0.19	8	0.19	0.19	0.19	8	0.19	0.19	0.19	8	0.19	0.19	0.19	8	0.19	0.19	0.19								
9	0.19	0.19	0.19	9	0.19	0.19	0.19	9	0.19	0.19	0.19	9	0.19	0.19	0.19	9	0.19	0.19	0.19	9	0.19	0.19	0.19	9	0.19	0.19	0.19	9	0.19	0.19	0.19								
10	0	0	0	10	0	0	0	10	0	0	0	1																											

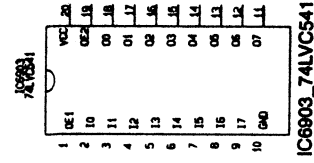


PRINTED CIRCUIT DIAGRAMS  
1. VDR P.C.BOARD(TOP VIEW)

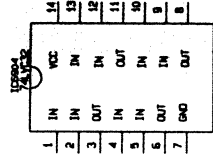




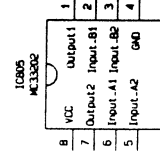
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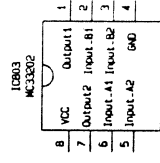
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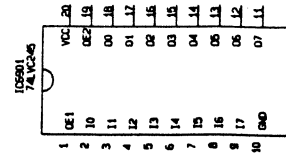
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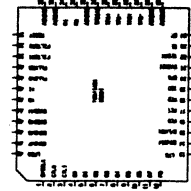
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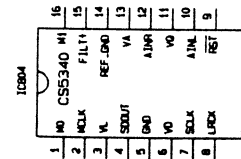
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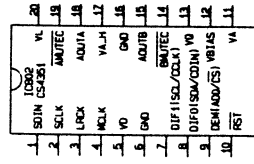
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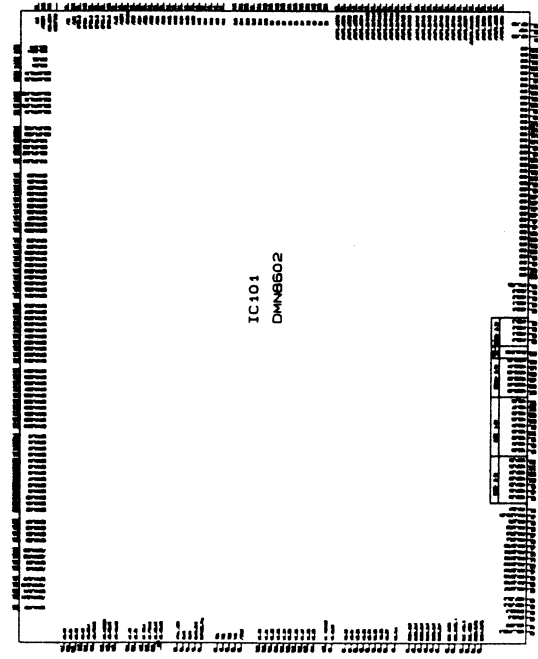


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• IC BLOCK DIAGRAMS



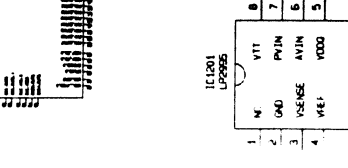
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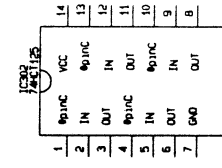
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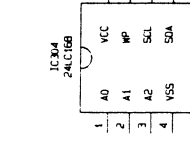
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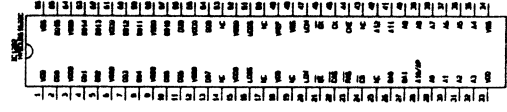
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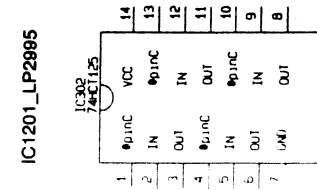
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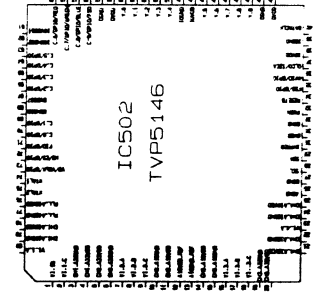
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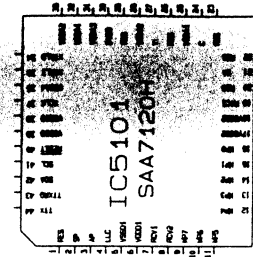
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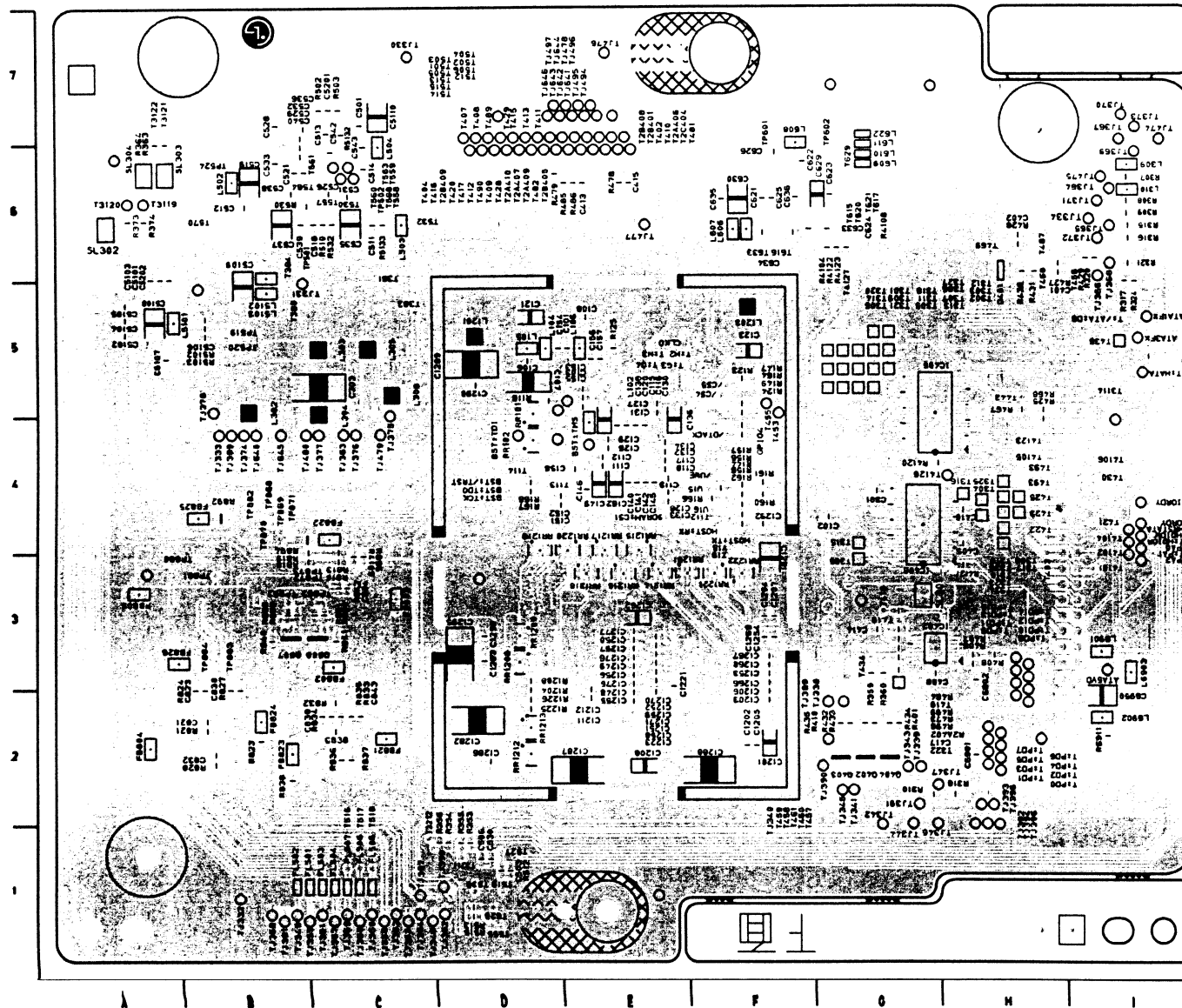
# LOCATION GUIDE

BC807G3	C403 C5	C829 H2	L501 H6	R152 F4	R447 F6	R5A0 G1	RR1202 D3	T440 F6	T541 H6	T858 G1
BC817H3	C404 C5	C831 H2	LD301H4	R153 F4	R448 F6	R601 D7	RR1203 D3	T441 F6	T542 H6	T864 I2
BC818H3	C411 B4	C833 H3	PN301H4	R154 D4	R449 F6	R603 C7	RR1204 F3	T442 A4	T543 H6	T865 H2
BC819I3	C412 B5	C834 H3	PN302A6	R155 D4	R450 F6	R642 D7	RR1205 F3	T444 F6	T544 H6	T872 H3
BC825H2	C423 C3	C835 G3	PN303B1	R159 D4	R451 F6	R644 D7	RR1206 F3	T445 F6	T546 H7	T873 I3
BC826H2	C502 H6	C836 I3	PN304G1	R163 D4	R452 F6	R645 D7	RR1207 F3	T446 F6	T547 H7	T875 H4
C104 F5	C504 F1	C837 I2	PN305I6	R165 D4	R453 F6	R646 C7	RR1210 D2	T447 F6	T548 H7	T876 H3
C105 F5	C505 F1	C840 G2	R101 F4	R169 A5	R454 F6	R647 C6	RR1211 D2	T448 F6	T549 H7	T877 I3
C109 F5	C507 F1	C841 G2	R102 F4	R301 B4	R455 F6	R648 D6	RR1223 D3	T449 F6	T556 G7	T878 H3
C1209F2	C508 F1	C842 G2	R103 F4	R302 B4	R456 F6	R649 D7	RR1224 D3	T450 F6	T562 G6	T881 G2
C1210F2	C509 H6	C844 H2	R104 F4	R303 B4	R457 F6	R650 C6	RR1225 F3	T451 F6	T565 G7	T885 G3
C1213F3	C510 G6	C845 H2	R105 F4	R304 B4	R458 F6	R651 C6	RR1226 D2	T452 C5	T566 G7	T887 H4
C1214F3	C515 H7	C847 G2	R106 F4	R305 B4	R459 F6	R652 C6	RR1227 D3	T454 C5	T569 G7	T889 G2
C1215F2	C516 H6	C848 G2	R107 F4	R306 B4	R460 F6	R653 C6	RR501G7	T462 C5	T601 D7	T890 H2
C1216F2	C517 H7	C849 H4	R112 F4	R311 C2	R461 F6	R654 C6	RR502G7	T463 C5	T602 D7	TP504G6
C1217F2	C520 H6	C898 H3	R113 F4	R312 C2	R462 F6	R655 C6	RR601D6	T464 C5	T603 D6	TP505G6
C1218F2	C5203H7	C899 G4	R114 F4	R313 C2	R463 F6	R656 D7	RR602D6	T465 C5	T604 D7	TP506G6
C1222F2	C522 H6	CON401F7	R115 F4	R314 C2	R464 A4	R657 D7	SW401C6	T466 F6	T605 D6	TP5106 I5
C1236F3	C524 H7	D101 F5	R1201 D3	R319 A6	R465 B4	R658 D7	T111 D4	T467 F6	T606 D6	TP512G7
C1237F3	C525 H7	D102 F5	R1202E2	R323 C2	R469 C5	R659 D7	T120 F2	T470 C5	T607 D6	TP513G7
C1246F3	C527 H6	D401 B5	R1203E2	R337 H4	R470 B5	R660 D6	T2A408E6	T471 B5	T608 D6	TP514G7
C1247F3	C534 H7	FB801H3	R1205D3	R338 C2	R474 C5	R661 D7	T2B40F26	T472 C5	T609 D6	TP515G7
C1261D3	C541 H7	H101 C3	R1206E3	R361 A5	R476 C5	R662 D6	T2B40E36	T484 G7	T610 D6	TP516G7
C1272F2	C620 C7	H301 B2	R1207E3	R365 I6	R493 E6	R663 D6	T2B40E46	T507 G6	T611 D6	TP517G7
C1278F3	C627 C6	H601 A3	R1209E2	R366 I6	R504 G1	R664 C7	T3115 I6	T508 G6	T612 D6	TP518 I5
C1280F3	C628 C6	IC101 E4	R121 F4	R367 I6	R505 H7	R6901A4	T3116 I6	T509 G6	T613 D7	TP521 I5
C1284F2	C631 C6	IC1201 F2	R1210 E2	R369 I6	R506 H7	R6902A5	T3117 I6	T510 G6	T614 D6	TP522 I5
C1285F2	C632 D6	IC1202 D2	R1211 E3	R370 I6	R507 H6	R6903A4	T328 C2	T5101 H6	T618 C6	TP532 I5
C1293D5	C637 C6	IC1203 E2	R1212 E3	R371 I6	R508 G1	R801 G1	T329 C2	T5102 I6	T619 D7	TP874G3
C1294F5	C638 C6	IC301 C4	R1213 E2	R372 I6	R509 H6	R802 G1	T334 C2	T5103 I6	T622 C7	TP875H3
C163 F5	C6903A3	IC302 C2	R1214 E3	R404 C5	R5104 I5	R805 H4	T335 C2	T5104 H5	T623 C6	TP876G3
C164 F5	C6904A5	IC304 I6	R1215 E3	R409 A4	R5106 I5	R806 G1	T336 C2	T5105 I5	T624 D7	TP879 I3
C165 F4	C6905A4	IC409 C5	R1216 E3	R4101 C5	R5108 I5	R807 G1	T337 C2	T5107 I5	T625 D7	T:ADD1F4
C302 C2	C801 G3	IC501 F1	R1217 F3	R4102 C5	R5110 I5	R810 G1	T379 G6	T5108 H5	T626 C7	T:ADD2F4
C304 G5	C802 G1	IC502 G6	R1218 E3	R4103 G7	R5111 I5	R811 G1	T382 G4	T5109 H5	T627 D6	T:ADD3F4
C305 G4	C803 G3	IC5101 I5	R1219 E3	R4106 G7	R5112 I5	R820 H2	T387 C2	T511 G7	T628 C7	T:ATA32A3
C306 G5	C805 H2	IC601 D6	R122 F5	R4107 G7	R5113 I5	R822 H3	T388 C2	T5110 H5	T630 D6	T:ATA34A3
C307 I4	C806 H3	IC6901 B3	R1220 E3	R416 C5	R5114 I5	R825 H4	T401 F6	T5111 H5	T631 D7	T:DAC1F5
C309 G5	C807 H3	IC6902 B2	R1221 E3	R420 C5	R5115 I5	R826 H2	T4124 C4	T5112 H5	T632 D7	T:DAC2F5
C310 G4	C808 G3	IC6903 A4	R1222 E3	R426 A4	R5116 I5	R829 H2	T4125 C4	T5113 I5	T634 E6	T:DAC3F5
C311 G5	C809 H4	IC6904 A5	R1223 E3	R436 F6	R5117 I5	R830 I3	T414 F6	T5114 I5	T635 E6	T:GND I4
C312 G5	C810 G2	IC802 G3	R1224 E3	R437 F6	R514 F1	R831 I3	T424 F6	T5115 I5	T636 E6	T:VCR:VIDEO
C313 G5	C811 G1	IC803 H2	R1227 F2	R438 F6	R526 G7	R839 G2	T426 F6	T5116 H5	T637 E6	X101 E5
C314 G5	C812 G3	IC804 H3	R1228 F2	R439 F6	R529 H7	R843 G2	T427 F6	T5117 I5	T638 E6	X501 H6
C315 H5	C813 G3	IC805 G2	R1229 F2	R440 F6	R531 G7	R844 G2	T431 F6	T521 H7	T639 E6	X601 D6
C316 G5	C815 I3	L103 F5	R141 D4	R441 F6	R533 H7	R890 F4	T432 F6	T522 H7	T640 E6	
C317 G5	C820 H2	L107 E5	R142 D4	R442 F6	R538 G6	R891 H3	T433 F6	T525 G7	T641 F7	
C318 H5	C822 I2	L1202 D3	R143 D4	R443 F6	R539 G6	R893 G3	T435 F6	T526 G7	T642 D6	
C319 H5	C824 H2	L1204 F3	R146 D4	R444 F6	R540 G6	RR103 D5	T437 F6	T528 F1	T850 H2	
C320 H5	C827 I3	L306 G4	R150 F4	R445 F6	R541 G6	RR104 D4	T438 F6	T529 G7	T856 G2	
C327 I6	C828 I3	L307 I4	R151 F4	R446 F6	R542 G6	RR105 D4	T439 F6	T540 H6	T857 G1	

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/CS4	F5	C1257	F3	C162	F4	C543	C6	IC406	G2	R158	F4	R432	G2	R889	B3	T301	G5	T4103	H4	T504	C7	T869	B2	TJ369	I6	TP868	B4
/CS5	F5	C1258	F3	C163	F4	C544	C6	IC407	G2	R159	F4	R433	G2	R890	B3	T302	G5	T4104	H4	T505	C7	T870	B2	TJ370	I6	TP869	B4
/DIACK	F4	C1259	F3	C164	F4	C545	C6	IC408	G2	R160	F4	R434	G2	R891	B3	T303	G5	T4105	H4	T506	C7	T871	B2	TJ371	I6	TP870	B4
/UWE	F4	C1260	F3	C165	F4	C546	C6	IC409	G2	R161	F4	R435	G2	R892	B3	T304	G5	T4106	H4	T507	C7	T872	B2	TJ372	I6	TP871	B4
ATAIFX	F5	C1261	F3	C166	F4	C547	C6	IC410	G2	R162	F4	R436	G2	R893	B3	T305	G5	T4107	H4	T508	C7	T873	B2	TJ373	I6	TP872	B4
ATA3FX	F5	C1262	F3	C167	F4	C548	C6	IC411	G2	R163	F4	R437	G2	R894	B3	T306	G5	T4108	H4	T509	C7	T874	B2	TJ374	I6	TP873	B4
ATA5V0	F3	C1263	F3	C168	F4	C549	C6	IC412	G2	R164	F4	R438	G2	R895	B3	T307	G5	T4109	H4	T510	C7	T875	B2	TJ375	I6	TP874	B4
BST:R	B8	C1264	F3	C169	F4	C550	C6	IC413	G2	R165	F4	R439	G2	R896	B3	T308	G5	T4110	H4	T511	C7	T876	B2	TJ376	I6	TP875	B4
BST:TD	C4	C1265	F3	C170	F4	C551	C6	IC414	G2	R166	F4	R440	G2	R897	B3	T309	G5	T4111	H4	T512	C7	T877	B2	TJ377	I6	TP876	B4
BST:TD	D5	C1266	F3	C171	F4	C552	C6	IC415	G2	R167	F4	R441	G2	R898	B3	T310	G5	T4112	H4	T513	C7	T878	B2	TJ378	I6	TP877	B4
BST:TD	D5	C1267	F3	C172	F4	C553	C6	IC416	G2	R168	F4	R442	G2	R899	B3	T311	G5	T4113	H4	T514	C7	T879	B2	TJ379	I6	TP878	B4
BST:TD	D5	C1268	F3	C173	F4	C554	C6	IC417	G2	R169	F4	R443	G2	R900	B3	T312	G5	T4114	H4	T515	C7	T880	B2	TJ380	I6	TP879	B4
BST:TD	D5	C1269	F3	C174	F4	C555	C6	IC418	G2	R170	F4	R444	G2	R901	B3	T313	G5	T4115	H4	T516	C7	T881	B2	TJ381	I6	TP880	B4
BST:TD	D5	C1270	F3	C175	F4	C556	C6	IC419	G2	R171	F4	R445	G2	R902	B3	T314	G5	T4116	H4	T517	C7	T882	B2	TJ382	I6	TP881	B4
BST:TD	D5	C1271	F3	C176	F4	C557	C6	IC420	G2	R172	F4	R446	G2	R903	B3	T315	G5	T4117	H4	T518	C7	T883	B2	TJ383	I6	TP882	B4
BST:TD	D5	C1272	F3	C177	F4	C558	C6	IC421	G2	R173	F4	R447	G2	R904	B3	T316	G5	T4118	H4	T519	C7	T884	B2	TJ384	I6	TP883	B4
BST:TD	D5	C1273	F3	C178	F4	C559	C6	IC422	G2	R174	F4	R448	G2	R905	B3	T317	G5	T4119	H4	T520	C7	T885	B2	TJ385	I6	TP884	B4
BST:TD	D5	C1274	F3	C179	F4	C560	C6	IC423	G2	R175	F4	R449	G2	R906	B3	T318	G5	T4120	H4	T521	C7	T886	B2	TJ386	I6	TP885	B4
BST:TD	D5	C1275	F3	C180	F4	C561	C6	IC424	G2	R176	F4	R450	G2	R907	B3	T319	G5	T4121	H4	T522	C7	T887	B2	TJ387	I6	TP886	B4
BST:TD	D5	C1276	F3	C181	F4	C562	C6	IC425	G2	R177	F4	R451	G2	R908	B3	T320	G5	T4122	H4	T523	C7	T888	B2	TJ388	I6	TP887	B4
BST:TD	D5	C1277	F3	C182	F4	C563	C6	IC426	G2	R178	F4	R452	G2	R909	B3	T321	G5	T4123	H4	T524	C7	T889	B2	TJ389	I6	TP888	B4
BST:TD	D5	C1278	F3	C183	F4	C564	C6	IC427	G2	R179	F4	R453	G2	R910	B3	T322	G5	T4124	H4	T525	C7	T890	B2	TJ390	I6	TP889	B4
BST:TD	D5	C1279	F3	C184	F4	C565	C6	IC428	G2	R180	F4	R454	G2	R911	B3	T323	G5	T4125	H4	T526	C7	T891	B2	TJ391	I6	TP890	B4
BST:TD	D5	C1280	F3	C185	F4	C566	C6	IC429	G2	R181	F4	R455	G2	R912	B3	T324	G5	T4126	H4	T527	C7	T892	B2	TJ392	I6	TP891	B4
BST:TD	D5	C1281	F3	C186	F4	C567	C6	IC430	G2	R182	F4	R456	G2	R913	B3	T325	G5	T4127	H4	T528	C7	T893	B2	TJ393	I6	TP892	B4
BST:TD	D5	C1282	F3	C187	F4	C568	C6	IC431	G2	R183	F4	R457	G2	R914	B3	T326	G5	T4128	H4	T529	C7	T894	B2	TJ394	I6	TP893	B4
BST:TD	D5	C1283	F3	C188	F4	C569	C6	IC432	G2	R184	F4	R458	G2	R915	B3	T327	G5	T4129	H4	T530	C7	T895	B2	TJ395	I6	TP894	B4
BST:TD	D5	C1284	F3	C189	F4	C570	C6	IC433	G2	R185	F4	R459	G2	R916	B3	T328	G5	T4130	H4	T531	C7	T896	B2	TJ396	I6	TP895	B4
BST:TD	D5	C1285	F3	C190	F4	C571	C6	IC434	G2	R186	F4	R460	G2	R917	B3	T329	G5	T4131	H4	T532	C7	T897	B2	TJ397	I6	TP896	B4
BST:TD	D5	C1286	F3	C191	F4	C572	C6	IC435	G2	R187	F4	R461	G2	R918	B3	T330	G5	T4132	H4	T533	C7	T898	B2	TJ398	I6	TP897	B4
BST:TD	D5	C1287	F3	C192	F4	C573	C6	IC436	G2	R188	F4	R462	G2	R919	B3	T331	G5	T4133	H4	T534	C7	T899	B2	TJ399	I6	TP898	B4
BST:TD	D5	C1288	F3	C193	F4	C574	C6	IC437	G2	R189	F4	R463	G2	R920	B3	T332	G5	T4134	H4	T535	C7	T900	B2	TJ400	I6	TP899	B4
BST:TD	D5	C1289	F3	C194	F4	C575	C6	IC438	G2	R190	F4	R464	G2	R921	B3	T333	G5	T4135	H4	T536	C7	T901	B2	TJ401	I6	TP900	B4
BST:TD	D5	C1290	F3	C195	F4	C576	C6	IC439	G2	R191	F4	R465	G2	R922	B3	T334	G5	T4136	H4	T537	C7	T902	B2	TJ402	I6	TP901	B4
BST:TD	D5	C1291	F3	C196	F4	C577	C6	IC440	G2	R192	F4	R466	G2	R923	B3	T335	G5	T4137	H4	T538	C7	T903	B2	TJ403	I6	TP902	B4
BST:TD	D5	C1292	F3	C197	F4	C578	C6	IC441	G2	R193	F4	R467	G2	R924	B3	T336	G5	T4138	H4	T539	C7	T904	B2	TJ404	I6	TP903	B4
BST:TD	D5	C1293	F3	C198	F4	C579	C6	IC442	G2	R194	F4	R468	G2	R925	B3	T337	G5	T4139	H4	T540	C7	T905	B2	TJ405	I6	TP904	B4
BST:TD	D5	C1294	F3	C199	F4	C580	C6	IC443	G2	R195	F4	R469	G2	R926	B3	T338	G5	T4140	H4	T541	C7	T906	B2	TJ406	I6	TP905	B4
BST:TD	D5	C1295	F3	C200	F4	C581	C6	IC444	G2	R196	F4	R470	G2	R927	B3	T339	G5	T4141	H4	T542	C7	T907	B2	TJ407	I6	TP906	B4
BST:TD	D5	C1296	F3	C201	F4	C582	C6	IC445	G2	R197	F4	R471	G2	R928	B3	T340	G5	T4142	H4	T543	C7	T908	B2	TJ408	I6	TP907	B4
BST:TD	D5	C1297	F3	C202	F4	C583	C6	IC446	G2	R198	F4	R472	G2	R929	B3	T341	G5	T4143	H4	T544	C7	T909	B2	TJ409	I6	TP908	B4
BST:TD	D5	C1298	F3	C203	F4	C584	C6	IC447	G2	R199	F4	R473	G2	R930	B3	T342	G5	T4144	H4	T545	C7	T910	B2	TJ410	I6	TP909	B4
BST:TD	D5	C1299	F3	C204	F4	C585	C6	IC448	G2	R200	F4	R474	G2	R931	B3	T343	G5	T4145	H4	T546	C7	T911	B2	TJ411	I6	TP910	B4
BST:TD	D5	C1300	F3	C205	F4	C586	C6	IC449	G2	R201	F4	R475	G2	R932	B3	T344	G5	T4146	H4	T547	C7	T912	B2	TJ412	I6	TP911	B4
BST:TD	D5	C1301	F3	C206	F4	C587	C6	IC450	G2	R202	F4	R476	G2	R933	B3	T345	G5	T4147	H4	T548	C7	T913	B2	TJ413	I6	TP912	B4
BST:TD	D5	C1302	F3	C207	F4	C588	C6	IC451	G2	R203	F4	R477	G2	R934	B3	T346	G5	T4148	H4	T549	C7	T914	B2	TJ414	I6	TP913	B4
BST:TD	D5	C1303	F3	C208	F4	C589	C6	IC452	G2	R204	F4	R478	G2	R935	B3	T347	G5	T4149	H4	T550	C7	T915	B2	TJ415	I6	TP914	B4
BST:TD	D5	C1304	F3	C209	F4	C590	C6	IC453	G2	R205	F4	R479	G2	R936	B3	T348	G5	T4150	H4	T551	C7	T916	B2	TJ416	I6	TP915	B4
BST:TD	D5	C1305	F3	C210	F4	C591	C6	IC454	G2	R206	F4	R480	G2	R937	B3	T349	G5	T4151	H4	T552	C7	T917	B2	TJ417	I6	TP916	B4
BST:TD	D5	C1306	F3	C211	F4	C592	C6	IC455	G2	R207	F4	R481	G2	R938	B3	T350	G5	T4152	H4	T553	C7	T918	B2	TJ418	I6	TP917	B4
BST:TD	D5	C1307	F3	C212	F4	C593	C6	IC456	G2	R208	F4	R482	G2	R939	B3	T351	G5	T4153	H4	T554	C7	T919	B2	TJ419	I6	TP918	B4
BST:TD	D5	C1308	F3	C213	F4	C594	C6	IC457	G2	R209	F4	R483	G2	R940	B3	T352	G5	T4154	H4	T555	C7	T920	B2	TJ420	I6	TP919	B4
BST:TD	D5	C1309	F3	C214	F4	C595	C6	IC458	G2	R210	F4	R484	G2	R941	B3	T353	G5	T4155	H4	T556	C7	T921	B2	TJ421	I6	TP920	B4
BST:TD	D5	C1310	F3	C215	F4	C596	C6	IC459	G2	R211	F4	R485	G2	R942	B3	T354	G5	T4156	H4	T557	C7	T922	B2	TJ422	I6	TP921	B4
BST:TD	D5	C1311	F3	C216	F4	C597	C6	IC460	G2	R212	F4	R486	G2	R943	B3	T355	G5	T4157	H4	T558	C7	T923	B2	TJ423	I6	TP922	B4
BST:TD	D5	C1312	F3	C217	F4	C598	C6	IC461	G2	R213	F4	R487	G2	R944	B3	T356	G5	T4158	H4	T559	C7	T924	B2	TJ424	I6	TP923	B4
BST:TD	D5	C1313	F3	C218	F4	C599	C6	IC462	G2	R214	F4	R488	G2	R945	B3	T357	G5	T4159	H4	T560	C7	T925	B2	TJ425	I6	TP924	B4
BST:TD	D5	C1314	F3	C219	F4	C600	C6	IC463	G2	R215	F4	R489	G2	R946	B3	T358	G5	T4160	H4	T561	C7	T926	B2	TJ426	I6	TP925	B4
BST:TD	D5	C1315	F3	C220	F4	C601	C6	IC464	G2	R216	F4	R490	G2	R947	B3	T359	G5	T4161	H4	T562	C7	T927	B2	TJ427	I6	TP926	B4
BST:TD	D5	C1316	F3	C221	F4	C602	C6	IC465	G2	R217	F4	R491	G2	R948	B3	T360	G5	T4162	H4	T563	C7	T9					

## 2. VDR P.C.BOARD (BOTTOM VIEW)



## SECTION 4 MECHANISM OF VCR PART(D-37)

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#### TROUBLESHOOTING GUIDE

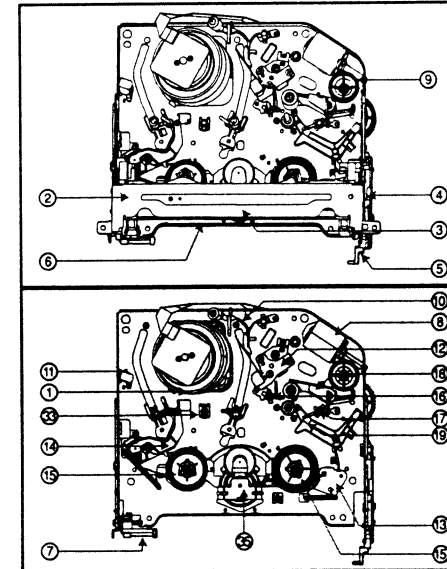
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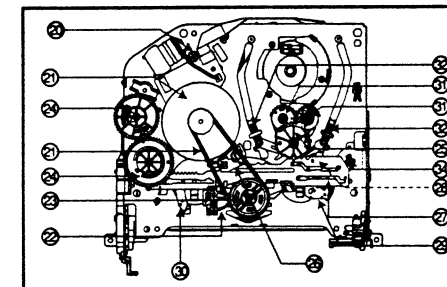
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## POSITION DRAWING OF DECK MECHANISM PARTS

#### • Top View



#### • Bottom View



Order Of Dis-assembly Parts (first) (Disassembled)	Part	Fixing Type	Ref. Draw-ings	Posi-tion
1	Drum Assembly	3 screws	A-1	T
2	Plate Top	2 hooks	A-2	T
2,3	Holder Assembly CST	6 chasses	A-2	T
2,3,4	Gear Assembly Rack F/L	1 hook	A-2	T
2,3,4,5	Opener Door	Chassis Hole	A-2	T
	6 Arm Assembly F/L	Chassis Hole	A-2	T
	7 Lever Assembly S/W	Chassis Hole	A-2	T
	8 Motor Assembly L/D	1 screw	A-3	T
	9 Gear Wheel	2 hooks	A-3	T
	10 Arm Assembly Cleaner	Chassis Embossing	A-3	T
	11 Head F/E	Chassis Embossing	A-3	T
	12 Base Assembly A/C Head	1 screw	A-3	T
2,3	13 Brake Assembly T	1 hook	A-4	T
2,3	14 Arm Assembly Tension	1 hook	A-4	T
2,3,13,14	15 Reel S / Reel T	Shaft	A-4	T
	16 Base Assembly P4	Chassis Embossing	A-5	T
	17 Opener Lid	Chassis Embossing	A-5	T
17	18 Arm Assembly Pinch	Shaft	A-5	T
17	19 Arm T/up	1 hook	A-5	T
	20 Supporter, capstan	Chassis Hole	A-6	B
17,18	21 Belt Capstan/Motor Capstan	3 screws	A-6	B
	22 Lever F/R	Locking Tab	A-6	B
21, 22	23 Clutch Assembly D37	Washer	A-6	B
	24 Gear Drive/Gear Cam	Washer/Hook	A-7	B
	25 Gear Sector	Hook	A-7	B
21	26 Brake Assembly Capstan	Chassis Hole	A-7	B
21, 22, 23, 24, 25, 26	27 Plate Slider	Chassis Guide	A-7	B
21, 22, 23, 24, 25, 26, 27	28 Lever Tension	1 Hook	A-7	B
21, 22, 23, 24, 25, 26, 27	29 Lever Spring	1 Hook	A-7	B
21, 22, 23, 24, 25, 26, 27	30 Lever Brake	1 Hook	A-7	B
25	31 Gear Assembly P2/ Gear Assembly P3	Base	A-8	B
2, 3, 14, 25, 31	32 Base Assembly P2 Base Assembly P3	6 Chasses	A-8	B
25, 31	33 Base Loading	3 Hooks	A-8	B
2,3,14	34 Base Tension	Chassis Embossing	A-9	T
	35 Arm Assembly Idler Jog	Locking Tab	A-9	T

T:Top, B:Bottom

- (1) For assembly, check the assembly mode is accurate.
- (2) Parts firstly disassembled indicate parts firstly disassembled in disassembly of related parts.

## DISASSEMBLY AND ASSEMBLY OF DECK MECHANISM

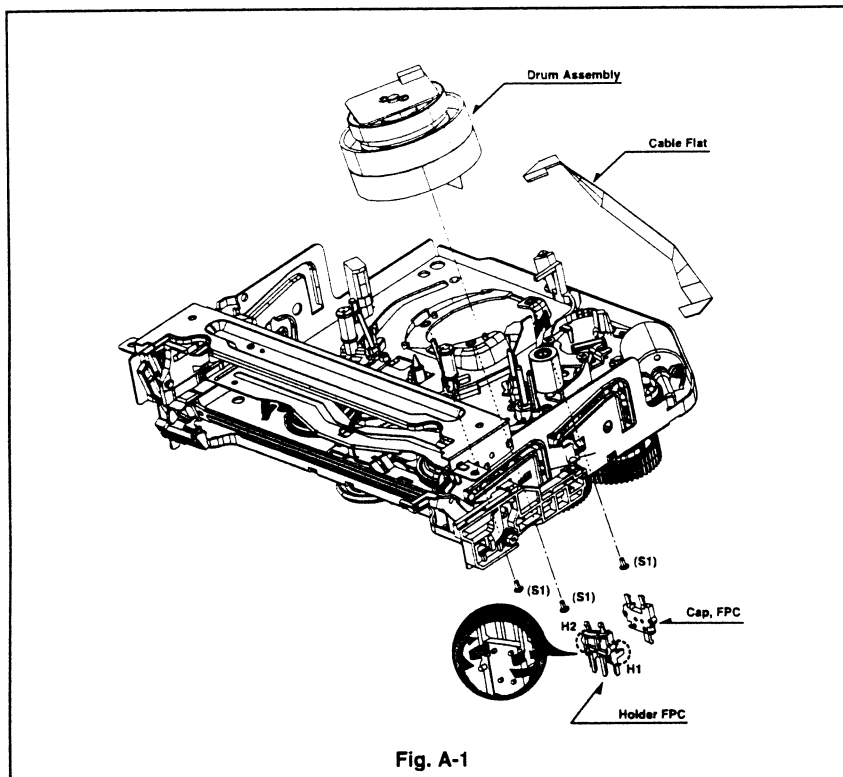
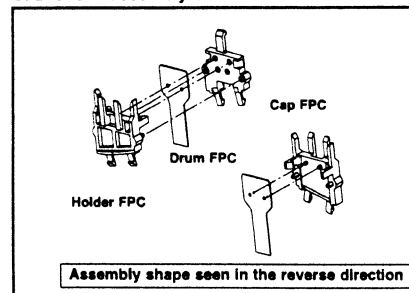


Fig. A-1

### 1. Disassembly of Drum Assembly (Figure A-1)

- 1) Separate cable flat from the Drum FPC and the Capstan Motor.
- 2) Release 3 screws (S1) on the bottom side of the chassis, and separate the drum assembly.
- 3) Release the hooks (H1, H2) and separate both the holder FPC and the Cap FPC (disassemble if necessary).

#### Cautions in assembly of FPC



## DISASSEMBLY AND ASSEMBLY OF DECK MECHANISM

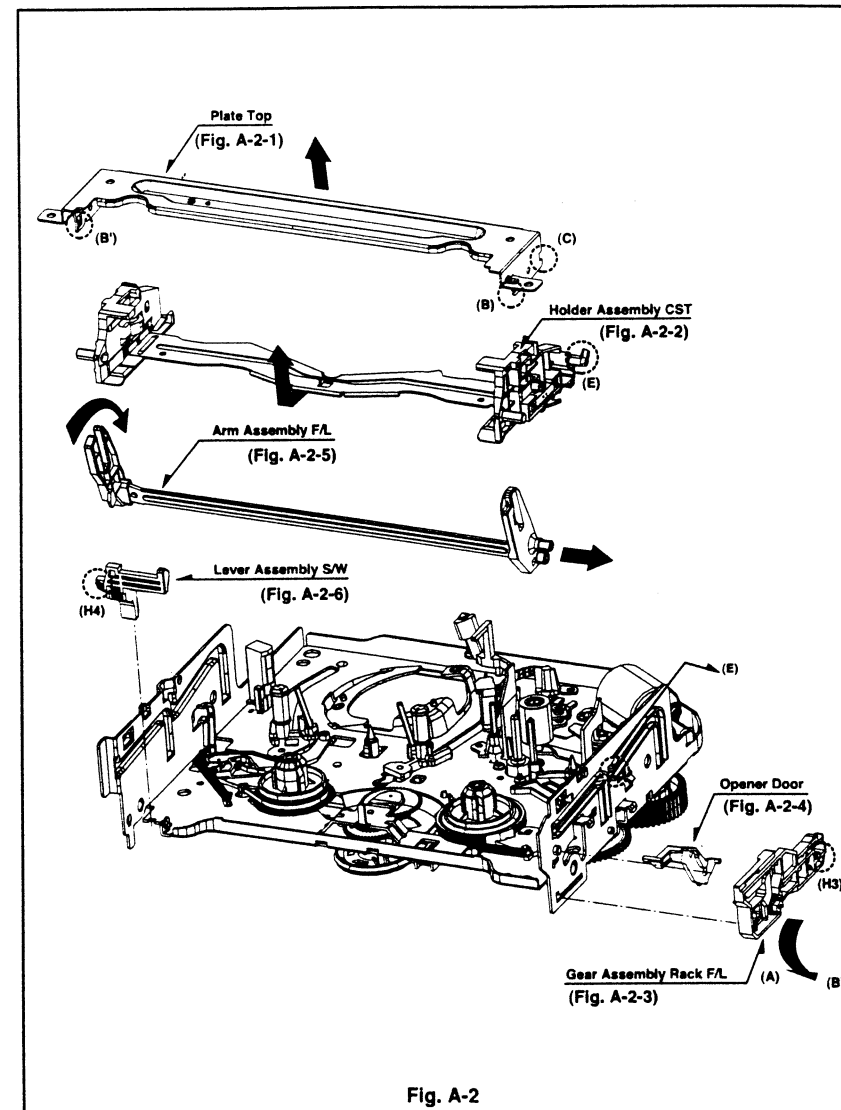


Fig. A-2

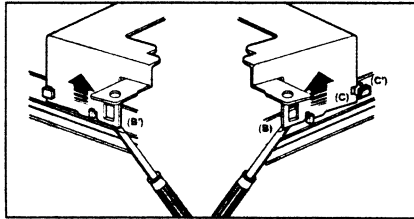
## DISASSEMBLY AND ASSEMBLY OF DECK MECHANISM

### 2. Disassembly of Plate Top (Fig. A-2-1)

- 1) Separate the right part while leaning back the (B) part of the plate top toward the arrow direction.
- 2) Separate the left part while leaning back the (B') part of the plate top toward the arrow direction.  
(Tool used: Tool such as (+) driver, auger, etc with pointed or flat end)

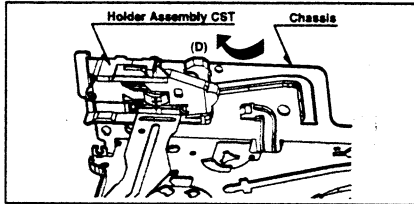
#### CAUTIONS

Assemble while pressing the (C), (C') part after corresponding them as in drawing.



### 3. Holder Assembly CST (Fig. A-2-2)

- 1) Firstly separate the left part from the groove on the (D) part of chassis while moving the holder assembly CST toward the arrow direction.



- 2) Separate the right part from each groove of chassis

#### CAUTIONS

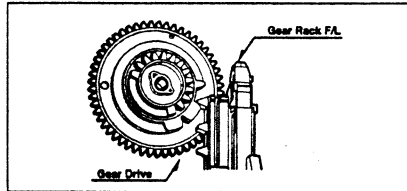
Assemble by inserting the left part after firstly inserting the (E) part of the holder assembly CST into the groove on the (E') part of chassis.

### 4. Disassembly of Gear Assembly Rack F/L (Fig. A-2-3)

- 1) Separate the hook (H3) while leaning ahead the hook (3) after moving the gear assembly rack F/L toward the arrow (A) direction.
- 2) Separate the gear assembly rack F/L toward the arrow (B) direction.

#### CAUTIONS

For the assembly, correspond the gear part of gear assembly rack F/L to the gear drive.



### 5. Opener Door (Fig. A-2-4)

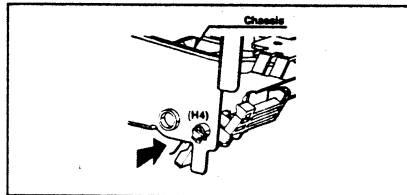
- 1) Separate the opener door ahead from the guide hole of chassis while turning it clockwise.

### 6. Arm Assembly F/L (Fig. A-2-5)

- 1) Firstly separate the left part of the arm assembly F/L from the groove of chassis while pushing the arm assembly F/L toward the arrow direction.
- 2) Separate the right part from the groove of chassis.

### 7. Lever Assembly S/W (Fig. A-2-6)

- 1) Separate the lever assembly S/W while pushing it toward the arrow direction after removing the hook (4) on the left side of chassis.



## DISASSEMBLY AND ASSEMBLY OF DECK MECHANISM

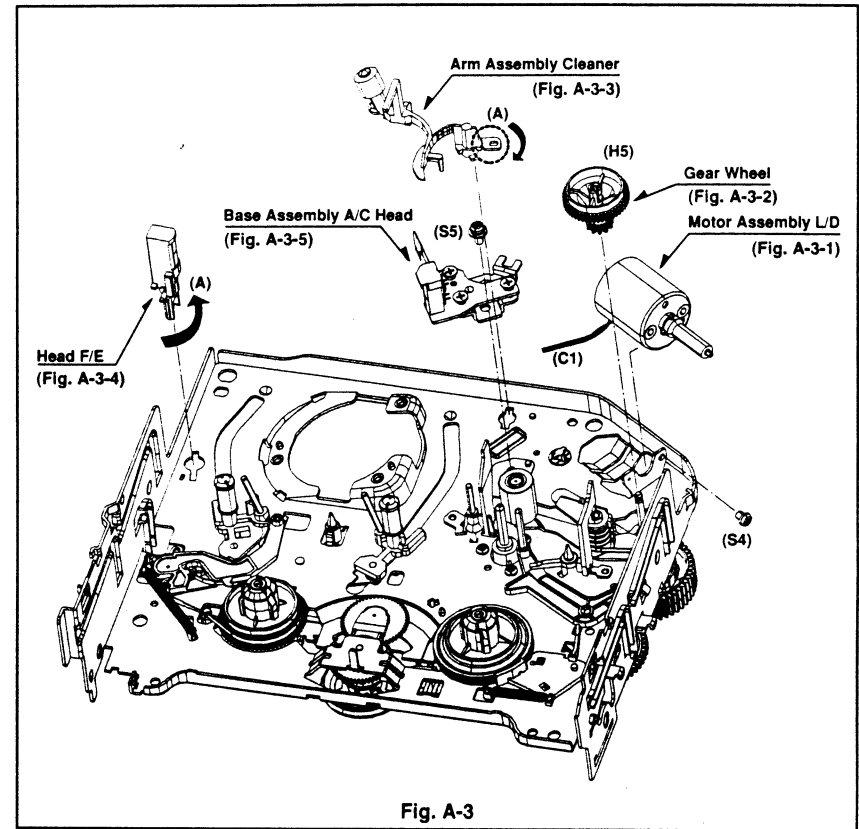


Fig. A-3

### 8. Motor Assembly L/D (Fig. A-3-1)

- 1) Take the connector (C1) connected to the Capstan motor PCB out.
- 2) Remove a screw (S4) of the chassis (S4) and step backward, and disassemble it while holding it up.

### 9. Gear Wheel (Fig. A-3-2)

- 1) Release the hook (H5) of the gear wheel and disassemble it upward.

### 10. Arm Assembly Cleaner (Fig. A-3-3)

- 1) Separate the (A) part of Fig. A-3-1 from the embossing of chassis, and hold it up while turning it anti-clockwise.

### 11. Head F/E (Fig. A-3-4)

- 1) Separate the (A) part of the head F/E from the embossing of chassis, and hold it up while turning it anti-clockwise.

### 12. Base Assembly A/C Head (Fig. A-3-5)

- 1) Release a screw (S5) and disassemble while holding it up.

## DISASSEMBLY AND ASSEMBLY OF DECK MECHANISM

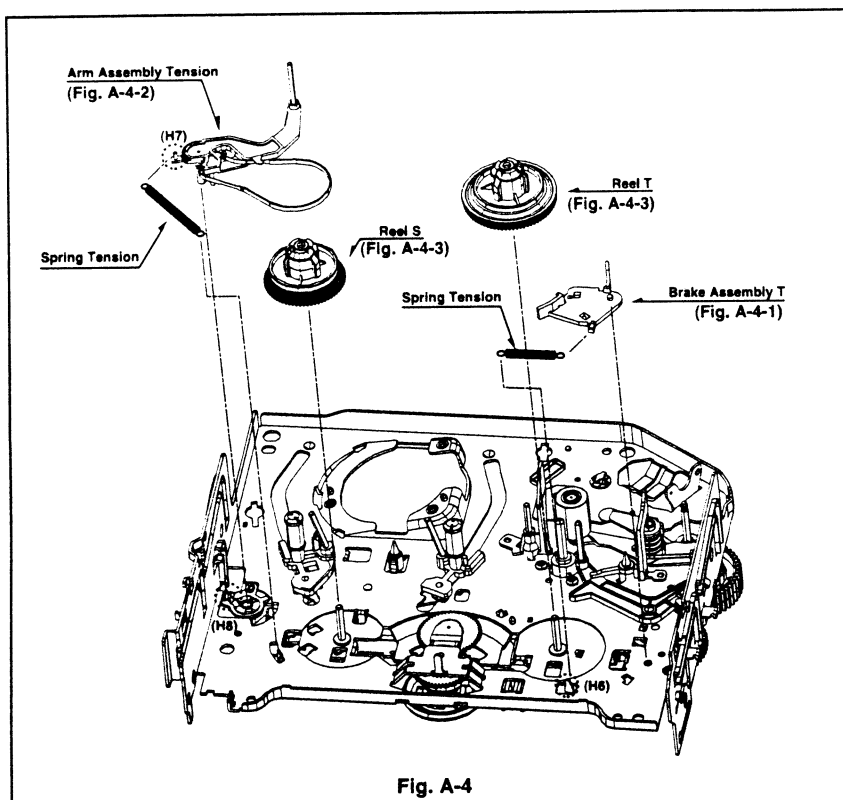


Fig. A-4

### 13. Brake Assembly T (Fig. A-4-1)

- 1) Release the spring tension from the lever spring hook (H6).
- 2) Disassemble the brake assembly T while holding it upward.

### 14. Arm Assembly Tension (Fig. A-4-2)

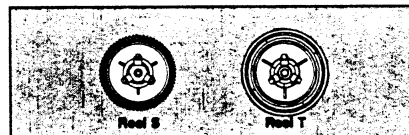
- 1) Release the spring tension the hook (H7) from the arm assembly tension.
- 2) After releasing the hook (H8) of the base tension, separate it while holding it up.

#### CAUTIONS

Spring used for both brake assembly T and arm assembly tension is used (2EA used).

### 15. Reel S/Reel T (Fig. A-4-3)

- 1) Disassemble the reel S/ reel T while holding it up (comparison between Reel S and Reel T)



## DISASSEMBLY AND ASSEMBLY OF DECK MECHANISM

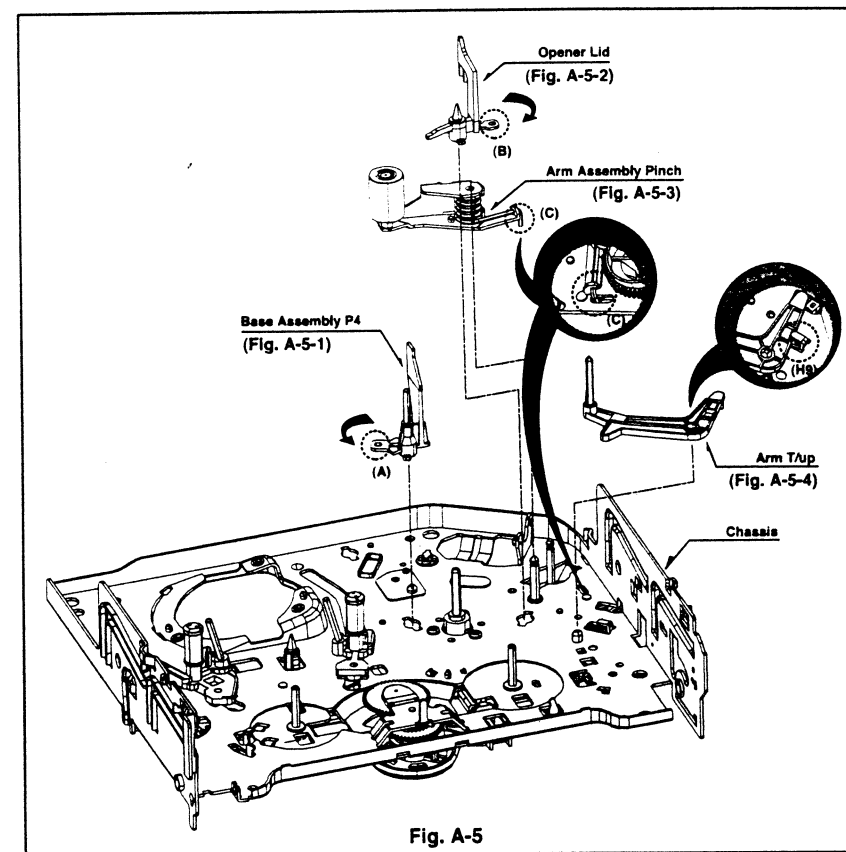


Fig. A-5

### 16. Base Assembly P4 (Fig. A-5-1)

- 1) Release the (A) part of the base assembly P4 from the embossing of chassis.
- 2) Hold the base assembly P4 up while turning it anti-clockwise.

### 17. Opener Lid (Fig. A-5-2)

- 1) Release the (B) part of the opener lid from the embossing of chassis.
- 2) Disassemble the opener lid upward while turning it anti-clockwise.

### 18. Arm Assembly Pinch (Fig. A-5-3)

- 1) Hold the arm assembly pinch up.

### 19. Arm T/up (Fig. A-5-4)

- 1) Turn the arm T/up to release the anchor jaw (H9) part of chassis and then hold it upward.

#### CAUTIONS

For the assembly, check the (C) part of the arm assembly pinch is assembled as in drawing.

- REVERSE THE MECHANISM.

## DISASSEMBLY AND ASSEMBLY OF DECK MECHANISM

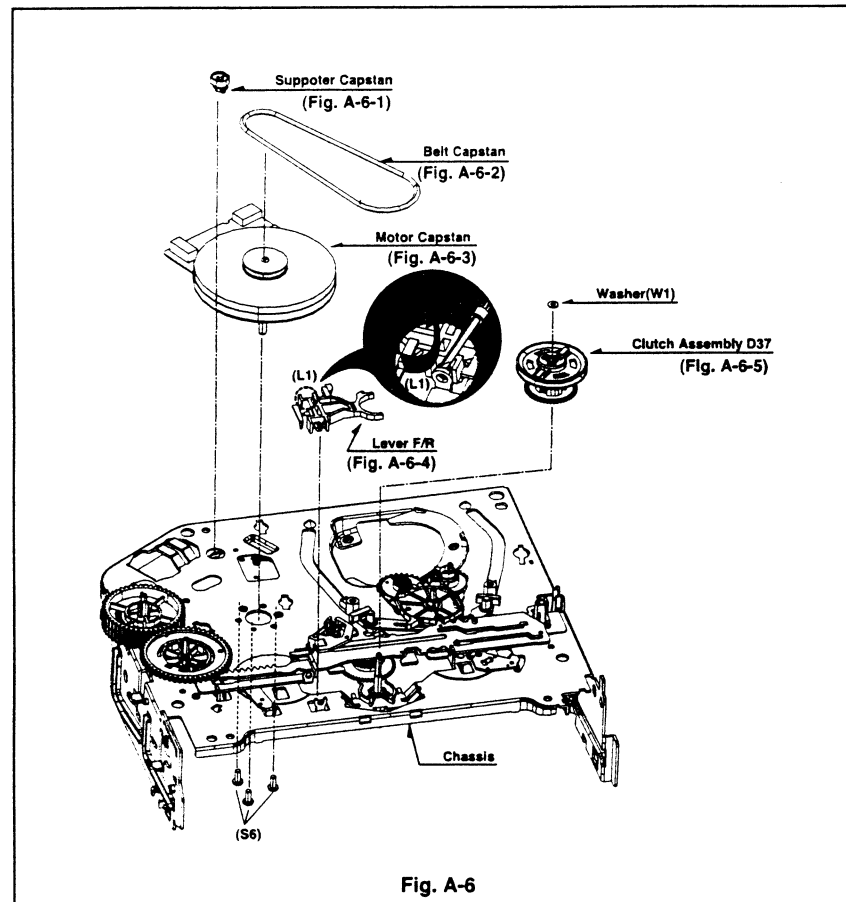


Fig. A-6

### 20. Supporter, Capstan (Fig. A-6-1)

- 1) Turn the supporter and Capstan by 90 deg. clockwise with a driver for disassembly.

### 21. Belt Capstan (Fig. A-6-2) / Motor Capstan (Fig. A-6-3)

- 1) Separate the belt Capstan.
- 2) Undo 3 screws (S6) on the bottom side of chassis and disassemble it upward.

### 22. Lever F/R (Fig. A-6-4)

- 1) Release the locking tab (L1) and then disassemble it upward.

### 23. Clutch Assembly D37 (Fig. A-6-5)

- 1) Remove the washer (W1) and then disassemble it upward.

## DISASSEMBLY AND ASSEMBLY OF DECK MECHANISM

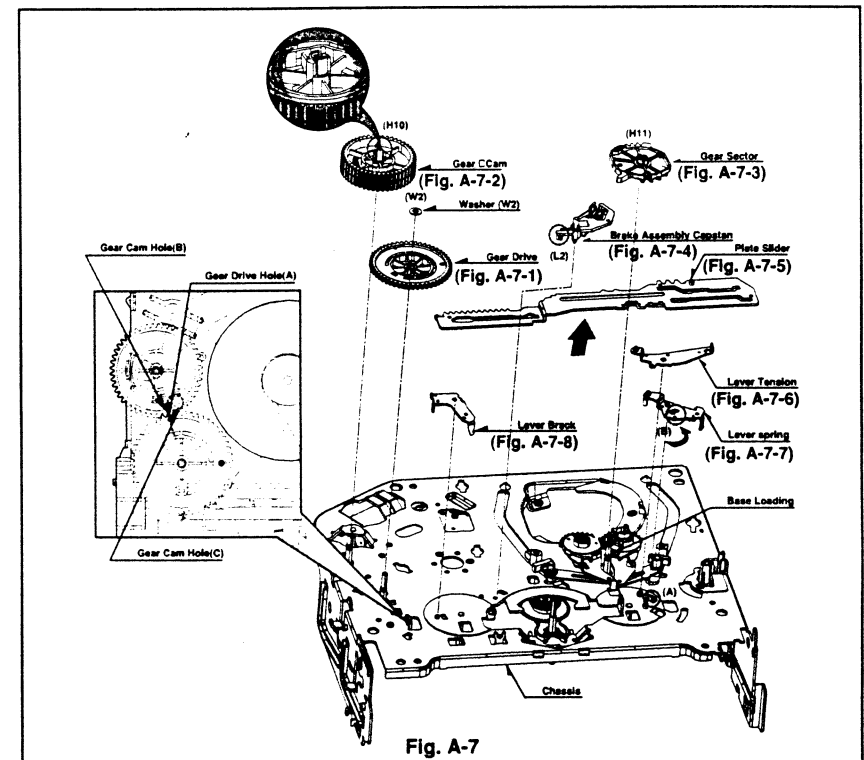


Fig. A-7

### 24. Gear Drive (Fig. A-7-1) / Gear Cam (Fig. A-7-2)

- 1) Remove the washer (W2) and then disassemble the gear drive.
- 2) Release the hook (H10) of the gear cam and then disassemble it upward.

### CAUTIONS

For the assembly, adjust both the gear driver hole (A) and the gear cam hole (B) straightly and then correspond the gear cam hole (C) to the chassis hole.

### 25. Gear Sector (Fig. A-7-3)

- 1) Release the hook (H11) of the gear sector and then hold the gear sector upward.

### 26. Brake Assembly Capstan (Fig. A-7-4)

- 1) Release the locking tab (L2) on the bottom side of the plate slider and then disassemble it upward.

### 27. Plate Slider (Fig. A-7-5)

- 1) Disassemble the plate slider while holding it up.

### 28. Lever Tension (Fig. A-7-6)

- 1) Release the lever tension from the guide (A) of chassis while turning it anti-clockwise.
- 2) Disassemble the lever tension while holding it up.

### 29. Lever Spring (Fig. A-7-7)

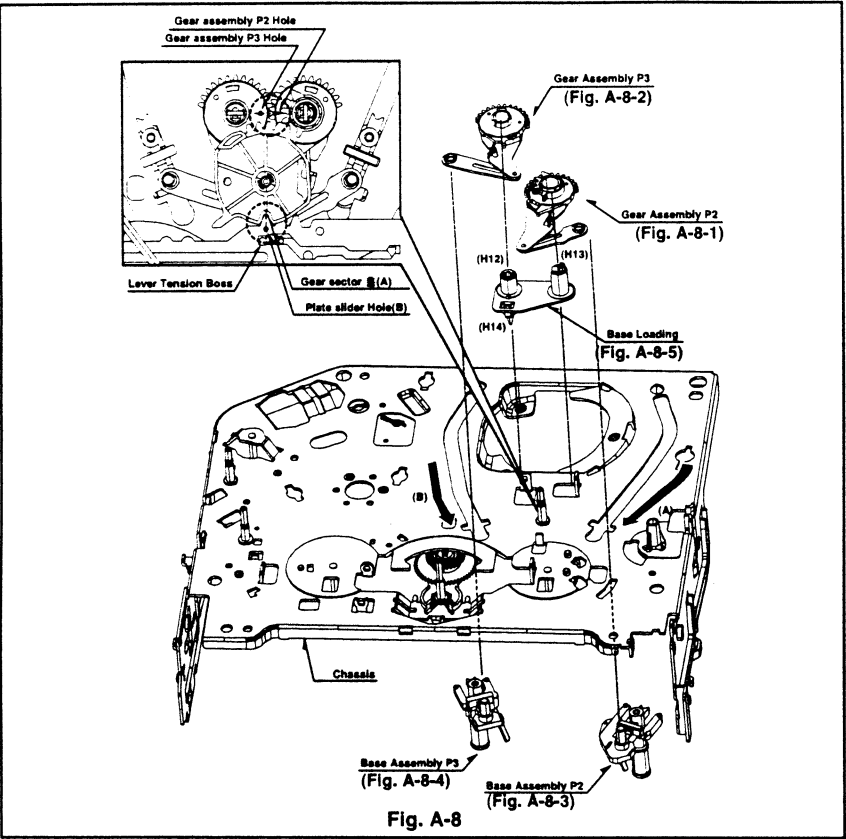
- 1) Release the (B) part of the lever spring from the guide (A) of chassis while turning it anti-clockwise.
- 2) Disassemble the lever tension while holding it up.

### 30. Lever Brake (Fig. A-7-8)

- 1) Disassemble the lever brake while holding it up.



DECK MECHANISM DISASSEMBLY



31. Gear Assembly P2 (Fig. A-8-1)/  
Gear Assembly P3 (Fig. A-8-2)

- 1) Hold the gear assembly P2 upward.
- 2) Hold the gear assembly P3 upward.

**CAUTIONS**

For the assembly, check the holes of both the gear assembly P2 and the P3 are adjusted straightly, and then correspond the gear section groove (A) to the plate slider hole (B).

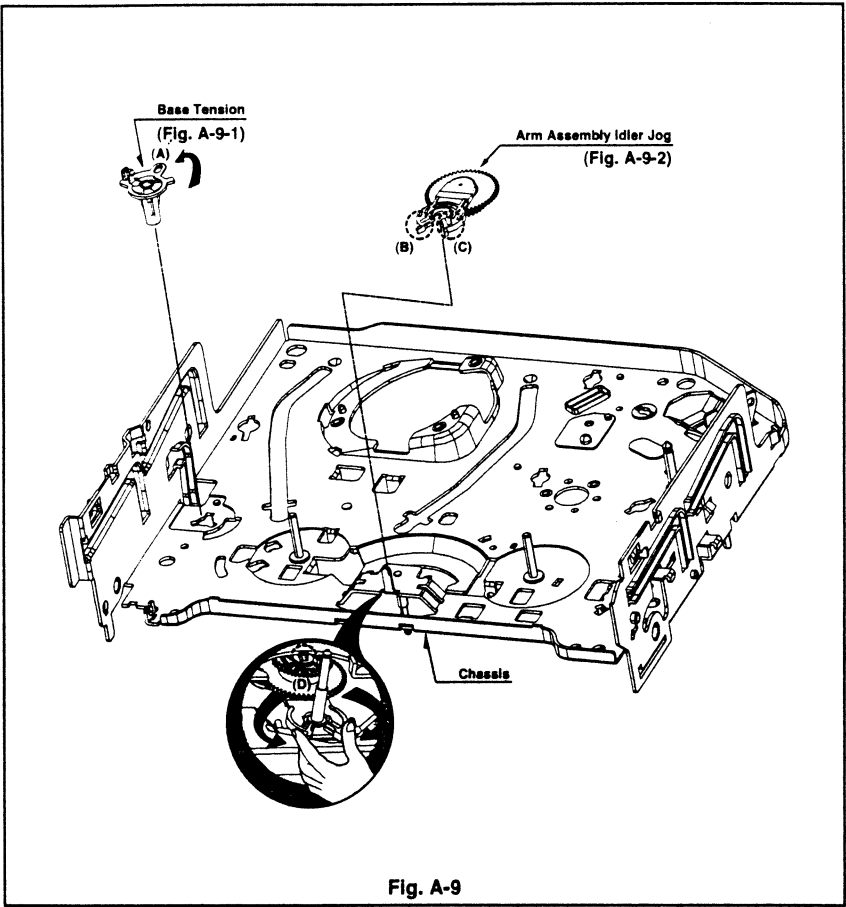
32. Base Assembly P2 (Fig. A-8-3)/  
Base Assembly P3 (Fig. A-8-4)

- 1) Disassemble the base assembly P2 downward while moving it toward the arrow (A) direction along with the guide hole of chassis.
- 2) Disassemble the base assembly P2 downward while moving it toward the arrow (B) direction along with the guide hole of chassis.

33. Base Loading (Fig. A-8-5)

- 1) Release 3 hooks (H12, 13, 14) of the base loading, and then disassemble them upward.
- Reverse the mechanism.

DISASSEMBLY AND ASSEMBLY OF DECK MECHANISM



34. Base Tension (Fig. A-9-1)

- 1) Release the (A) part of the base tension from the embossing of chassis.
- 2) Hold the base tension upward while turning it anti-clockwise.

35. Arm assembly Idler Jog (Fig. A-9-2)

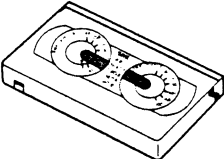
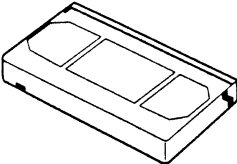


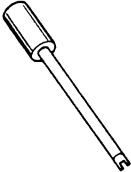
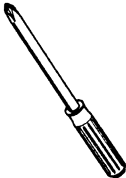
- 1) Push both (B), (C) parts in Fig. A-9-2 toward the arrow direction.
- 2) Disassemble the arm assembly idler upward.

**CAUTIONS**

Take care to ensure that the (D) part in the drawing is not hung to chassis in disassembly.

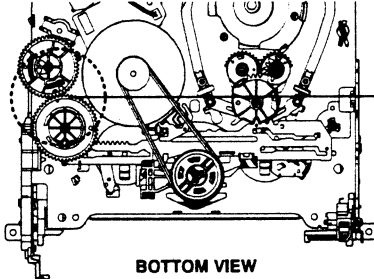
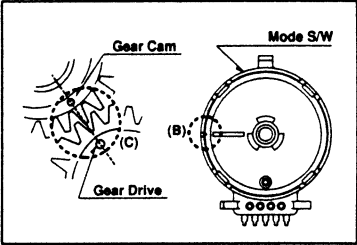
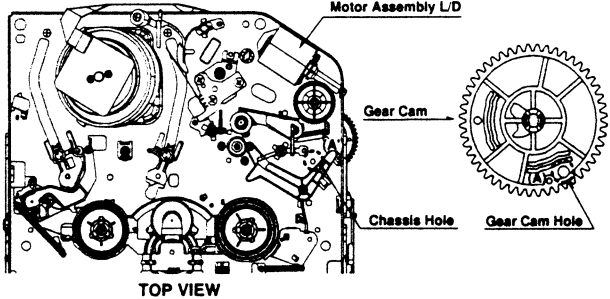
DECK MECHANISM ADJUSTMENT

• Fixtures and Tools for Service

<div>1. Cassette Torque Meter SRK-VHT-303(Not SVC part) Part No:D00-D006</div> <div></div>	<div>2. Alignment tape Part No NTSC:DTN-0001 PAL:DTN-0002</div> <div></div>	<div>3. Torque gauge 600g.Cm ATG Part No:D00-D002</div> <div></div>
<div>4. Torque gauge adaptor Part No:D09-R001</div> <div></div>	<div>5. Post height adjusting driver Part No:DTL-0005</div> <div></div>	<div>6. + Type driver (ø5)</div> <div></div>

DECK MECHANISM ADJUSTMENT

1. Mechanism Assembly Mode Check

Purpose of adjustment : To make tools normally operate by positioning tools accurately.		
Fixtures and tools used	VCR (VCP) status	Checking Position
• Blank Tape (empty tape)	• Eject Mode (with cassette withdrawn)	• Mechanism and Mode Switch
<div>1) Turn the VCR on and take the tape out by pressing the eject button.</div> <div>2) Separate both top cover and plate top, and check both the hole (A) of gear cam and the hole (A') of chassis correspond (Fig. C-2).</div> <div>3) If it is done as in the paragraph 2): Turn the gear cam as in No.2) after mantling the motor assembly L/D.</div> <div>4) Undo the screw fixing the deck and the main frame, and separate the deck assembly. Check both the hole (A) of gear cam and the hole (A') of chassis correspond (Fig. C-1).</div> <div>5) Check the mode S/W on the main P.C. board locates at a proper position as in (B) of the Fig. (C-1).</div> <div>6) Connect the deck to the main P.C. board and perform all types of test.</div>		
<div>CHECK DIAGRAM</div> <div><div><p>BOTTOM VIEW</p></div><div><p>Correspondence of the gear cam hole (O) and the gear drive hole (O)</p></div></div> <div>Fig. C-1</div>		
<div><p>TOP VIEW</p></div> <div>Fig. C-2</div>		

## DECK MECHANISM ADJUSTMENT

### 2. Previous Preparation for Deck Adjustment

(Preparation to load the VCR (VCP) with cassette tape not inserted)

- 1) Take the power cord from the consent.
- 2) Separate the top cover and the plate assembly top.
- 3) Insert the power cord into again.
- 4) Turn the VCR (VCP) on and load the cassette while pushing the lever stopper of the holder assembly CST backward. In this case, clog both holes on the housing rail part of chassis to prevent detection of the end sensor.

If doing so, proceeding to the stop mode is done. In this status, input signals of all modes can be received. However, operation of the Rewind and the Review is impossible since the take-up reel remains at stop status and so cannot detect the reel pulse (however, possible for several seconds).

### 3. Torque Measuring

**Purpose of Measuring :** To measure and check the reel torque on the take-up part and the supply part that performs basic operation of the VCR (VCP) for smoothly forwarding the tape.  
**Measure and check followings when the tape is not smoothly wound or the tape velocity is abnormally proceeded:**

Fixtures and tools used		VCR (VCP) status	Measuring method		
<ul style="list-style-type: none"> <li>• Torque Gauge (600 g.cm ATG)</li> <li>• Torque Gauge Adaptor</li> <li>• Cassette Torque Meter SRK-VHT-303</li> </ul>		• Play (FF) or Review (REW) Mode	<ul style="list-style-type: none"> <li>• Try to operate the VCR (VCP) per mode with the tape not inserted (See '2. Prior Preparation for Deck Adjustment).</li> <li>• Measure after adhering and fixing the torque gauge adaptor to the torque gauge (Fig. C-3-1)</li> <li>• Read scale of the supply or take-up part of the cassette torque meter (Fig. C-3-2).</li> </ul>		
Item	Mode	Instruments	Reel Measured	Measuring Value	
Fast forward Torque	Fast Forward	Torque Gauge	Take-Up Reel	More than 400g°cm	
Rewind Torque	Rewind	Torque Gauge	Supply Reel	More than 400g°cm	
Play Take-Up Torque	Play	VHT-303	Take-Up Reel	40~100g°cm	
Review Torque	Review	VHT-303	Supply Reel	120~210g°cm	

#### NOTE

Adhere the torque gauge adaptor to the torque gauge for measuring the value.

• Torque Gauge (600g.cm ATG)

• Cassette Torque Meter (SRK-VHT-303)

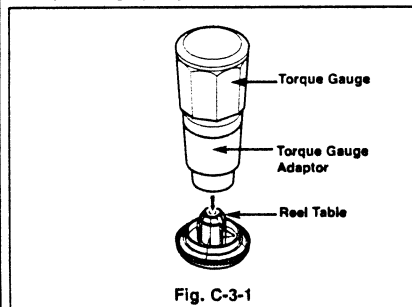


Fig. C-3-1

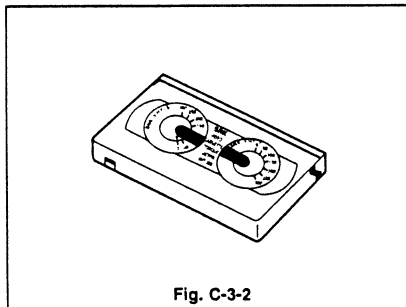


Fig. C-3-2

## DECK MECHANISM ADJUSTMENT

### 4. Guide Roller Height Adjustment

**Purpose of adjustment :** To ensure that the bottom surface of the tape can travel along with the tape lead line of the lower drum by constantly and adjusting and maintaining the height of the tape.

#### 4-1. Prior Adjustment

Fixtures and tools used	VCR (VCP) status	Adjustment position
• Post Height Adjusting Driver	• Play or Review Mode	• The guide roller height adjusting screw on the supply guide roller and the take-up guide roller
<b>Adjustment Procedure</b> <ol style="list-style-type: none"> <li>1) Travel the tape and check the bottom surface of the tape travels along with the guide line of the lower drum.</li> <li>2) If the tape travels toward the lower part of guide line on the lower drum, turn the guide roller height adjusting screw to the left.</li> <li>3) If it travels to the upper part, turn it to the right.</li> <li>4) Adjust the height of the guide roller to ensure that the tape is guided on the guide line of the lower drum at the inlet/outlet of the drum. (Fig. C-4-1)</li> </ol>		<b>ADJUSTMENT DIAGRAM</b> <p>Fig. C-4-1</p>

#### 4-2. Fine Adjustment

Fixtures and tools used	Measuring tools and connection position	VCR (VCP) status	Adjustment position
<ul style="list-style-type: none"> <li>• Oscilloscope</li> <li>• Standard test tape</li> <li>• Post height adjusting driver</li> </ul>	<ul style="list-style-type: none"> <li>• CH-1: PB RF Envelope</li> <li>• CH-2: NTSC : SW 30Hz PAL : SW 25Hz</li> <li>• Head switching output point</li> <li>• RF Envelope output point</li> </ul>	• Play the standard test tape.	• Guide roller height adjusting screw
<ol style="list-style-type: none"> <li>1) Play the standard test tape after connecting the probe of oscilloscope to the RF envelope output point and the head switching output point.</li> <li>2) Tracking control (playback) : Locate it at the center (Set the RF output to the maximum value via the tracking control when such adjustment is completed after the drum assembly is replaced.)</li> <li>3) Height adjusting screw: Flatten the RF waveform. (Fig. C-4-2)</li> <li>4) Move the tracking control (playback) to the right/left. (Fig. C-4-3)</li> <li>5) Check the start and the end of the RF output reduction width are constant.</li> </ol>		<b>Waveform</b> <p>Fig. C-4-2</p>	
<b>CAUTIONS</b> <p>There must exist no crumpling and folding of the tape due to excess adjustment or insufficient adjustment.</p>		<b>Connection Diagram</b>	

## DECK MECHANISM ADJUSTMENT

### 5. Audio/Control (A/C) Head Adjustment

**Purpose of adjustment :** To ensure that audio and control signals can be recorded and played according to the contract tract by constantly maintaining distance between tape and head, and tape tension between the P3 post and the P4 post.

#### 5-1. Prior Adjustment (performed only when no audio output appears in play of the standard test tape)

Fixtures and tools used	VCR (VCP) status	Adjustment position
<ul style="list-style-type: none"> <li>Blank Tape (Empty Tape)</li> <li>Driver (+) Type <math>\phi 4</math></li> </ul>	<ul style="list-style-type: none"> <li>Play the blank tape (empty tape).</li> </ul>	<ul style="list-style-type: none"> <li>Tilt adjusting screw (C)</li> <li>Height adjusting screw (B)</li> <li>Azimuth adjusting screw (A)</li> </ul>

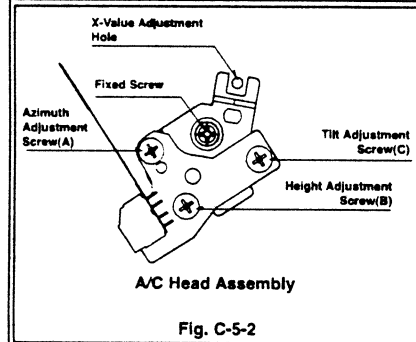
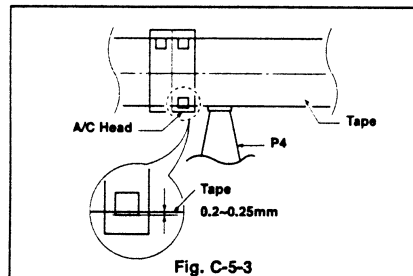
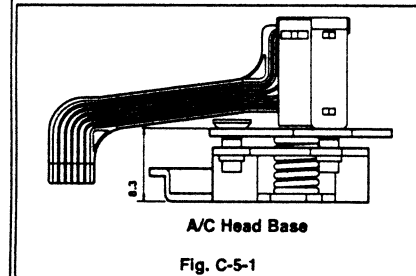
#### Adjustment Procedure/Adjustment Diagrams

- Basically use the A/C head assembly adjusted as in SPEC.
- Check there is crumpling and folding of the tape around the A/C head. If it is, Turn and adjust the tilt adjusting screw to ensure that the tape corresponds to the bottom guide of the P4, and recheck the tape path after proceeding play for 4-5 seconds.

- Where the tape bottom is not equal to Fig. C-5-3, Adjust the height by using the height adjusting screw (B) and then readjust it by using the tilt adjusting screw (C).

#### CAUTIONS

Always check the height of the A/C head since most ideal height of A/C head can be obtained when the bottom part of the tape is away 0.2 ~ 0.25mm from the bottom part of the A/C head.



## DECK MECHANISM ADJUSTMENT

### 5-2. Tape Path Check between Pinch Roller and Take up Guide (Check in the Rev Mode)

- Check the tape pass status between the pinch roller and the take-up guide. (Check there is crumpling of the tape pass and folding of the take-up guide.)
  - When holding of the take-up guide bottom occurs Turn the tilt adjusting screw (C) clockwise and travel it stably to ensure there is no crumbling or folding of the tape.
  - When holding of the take-up guide top occurs Turn the tilt adjusting screw (C) anti-clockwise and

travel it stably to ensure there is no crumbling or folding of the tape.

- Check there is folding of the tape at the bottom or top of the take-up guide in cutting-off the REV mode

#### CAUTIONS

If the RF waveform is changed after adjusting the A/C head, perform fine adjustment to ensure the RF waveform is flattened.

### 5-3. Fine Adjustment (Azimuth Adjustment)

Fixtures and tools used	Connection position	VCR (VCP) status	Adjustment position
<ul style="list-style-type: none"> <li>Oscilloscope</li> <li>Standard test tape (only for SP)</li> <li>Driver (+) Type <math>\phi 4</math></li> </ul>	<ul style="list-style-type: none"> <li>Audio Output Jack</li> </ul>	<ul style="list-style-type: none"> <li>Play the standard test tape, 1KHz, 7KHz.</li> </ul>	<ul style="list-style-type: none"> <li>Azimuth Adjusting Screw (A)</li> <li>Height Adjusting Screw (B)</li> </ul>
<b>Adjustment Procedure</b> <ol style="list-style-type: none"> <li>Connect the probe of Oscilloscope to the audio output jack.</li> <li>Ensure that Audio 1KHz, 7KHz output is flattened at the maximization point by adjusting the Azimuth adjusting screw (A).</li> </ol>		<p>Fig. C-5-4</p>	

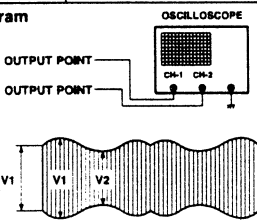
### 6. X-distance Adjustment

**Purpose of adjustment :** To maintain compatibility with other VCR (VCP).

Fixtures and tools used	Connection position	VCR (VCP) status	Adjustment position
<ul style="list-style-type: none"> <li>Oscilloscope</li> <li>Standard test tape (only for SP)</li> <li>Driver (+) Type <math>\phi 4</math></li> </ul>	<ul style="list-style-type: none"> <li>CH-1: PB RF Envelope</li> <li>CH-2: NTSC ; SW 30Hz PAL:SW 25Hz</li> <li>Head switching output point</li> <li>RF Envelope output point</li> </ul>	<ul style="list-style-type: none"> <li>Play the standard test tape.</li> </ul>	
<b>Adjustment Procedure</b> <ol style="list-style-type: none"> <li>After releasing the auto tracking, lightly turn the fixing screw. Turn the (+) type driver (<math>\phi 3 \sim \phi 4</math>) on the X-distance adjusting hole to the right or left. Adjust the RF envelope level to the maximum point and then fix the fixing screws.</li> <li>For the 31mm head, adjust it with the SP tape recorded in the width of 31mm since the head travels on the tape track only for SP with the width of 58mm.</li> </ol>		<b>Connection Diagram</b> <p>Fig. C-6</p>	

## DECK MECHANISM ADJUSTMENT

### 7. Adjustment after Drum Assembly (Video Heads)

Purpose of adjustment : To adjust and stabilize the height change, X-distance change, etc depending on the guide roller after assembling the drum.			
Fixtures and tools used	Connection position	VCR (VCP) status	Adjustment position
<ul style="list-style-type: none"> <li>Oscilloscope</li> <li>Standard test tape (only for SP)</li> <li>Post Height Adjusting Driver</li> <li>Driver (+) Type Ø 5</li> </ul>	<ul style="list-style-type: none"> <li>CH-1: PB RF Envelope</li> <li>CH-2: NTSC : SW 30Hz PAL:SW 25Hz</li> <li>Head switching output point</li> <li>RF Envelope output point</li> </ul>	<ul style="list-style-type: none"> <li>Play the blank tape.</li> <li>Play the standard test tape.</li> </ul>	<ul style="list-style-type: none"> <li>Fine adjustment of guide roller</li> <li>Switching Point</li> <li>Tracking Preset</li> <li>X-distance</li> </ul>
<b>Checking/Adjustment Procedure</b> 1) Play the blank tape (empty tape) and check whether the guide roller crumbles or wrinkles the tape and adjust it if necessary. 2) Check that the RF envelope output waveform is flat, and adjust the height of the guide roller while playing the standard test tape. 3) Adjust the switching point. 4) Check the RF envelope output is the maximum when the tracking control locates at the center. If not maximum, set up to ensure that RF envelope output becomes the maximum by turning the (+) type driver (Ø 3 ~ Ø 4) on the base A/C groove.		<b>Connection Diagram</b>  <b>Waveform</b> $V1/V \text{ MAX} = 0.7$ $V1/V \text{ MAX} = 0.8$ RF ENVELOPE OUTPUT	

### 8. Check of Traveling Device after Deck Assembly

#### 8-1. Audio, RF Normalization Time (Locking Time) Check in Play after CUE or REV

Fixtures and tools used	Measuring standard	Connection position	VCR (VCP) status
<ul style="list-style-type: none"> <li>Oscilloscope</li> <li>6H 3KHz Color Bar Standard Test tape</li> <li>Stop Watch</li> </ul>	<ul style="list-style-type: none"> <li>RF Locking Time: Within 5 seconds</li> <li>Audio Locking Time : Within 10 seconds</li> </ul>	<ul style="list-style-type: none"> <li>CH-1: PB RF Envelope</li> <li>CH-2: Audio output</li> <li>RF Envelope output point</li> <li>Audio output jack</li> </ul>	<ul style="list-style-type: none"> <li>Play the 6H 3KHz Color Bar Standard Test tape.</li> </ul>
<b>Checking Procedure</b> 1) Check that locking time of the RF and Audio waveform is fallen within the measuring standard in conversion of the play mode from the CUE or the REV mode. 2) Readjust the paragraph 5 and 6 if it deviates from the standard.			

#### 8-2. Check of Tape Curl and Jam Status

Fixtures and tools used	Fixtures and tools used	Fixtures and tools used
<ul style="list-style-type: none"> <li>T-160 Tape</li> <li>T-120 Tape</li> </ul>	<ul style="list-style-type: none"> <li>There must be no jam or curl at the first, middle and end position of tape.</li> </ul>	<ul style="list-style-type: none"> <li>Travel the tape at the position of its first and end.</li> </ul>
<b>Checking Procedure</b> 1) Check there is no abnormality of every traveling post status. 2) There must be no abnormal operation of the counter in occurrence of folding of the bottom tape. There must be not abnormality of audio signal in damage of the top tape. 3) If there is abnormality, readjust the adjustment paragraph 4 and 5.		

## PROTECTION, MAINTENANCE AND CHECK OF VIDEO FUNCTION

### 1. Checking Points prior to Repair

Following abnormal phenomena may be repaired by removal of foreign materials and oil supply. Check oiling is required at the checking set or cleaning status is complete. Determine that necessity of checking and repair the set exists after checking the using period of the set together with the user. In this case, followings must be checked:

Phenomena	Checking Points and Cause	Replacement
Color beat	Pollution of Full-Erase Head	o
S/N, Color Faded	Pollution of Video Head	o
Horizontal, Vertical Jits	Pollution of Video Head or Tape Transport System	o
Poor Sound, Low Sound	Pollution of Audio/Control Head	o
No tape wound or tape wound loosely, FF or REW impossible, or slow turning	Pollution of Pinch Roller or Belt Capstan Belt	o
Tape loosely wound in REV or Unloading	Deterioration of Clutch Assembly D37 Torque Pollution of Drum and Traveling Device	o Fig. C-9-3

### CAUTIONS

If operation of the position with (O) mark is abnormal even after removing cause, replace it with substitute product since it shows damage or wearing.

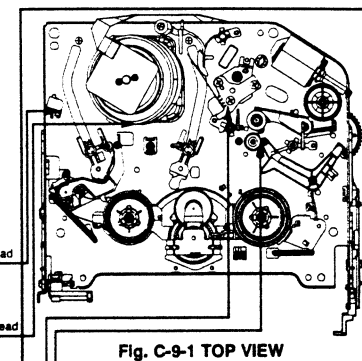


Fig. C-9-1 TOP VIEW

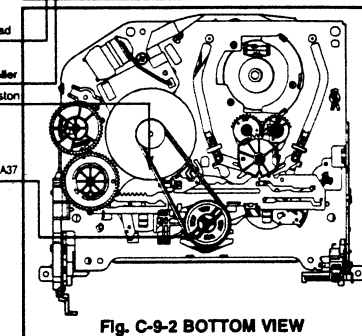


Fig. C-9-2 BOTTOM VIEW

\* No. (1) ~ (12) shows sequence that the tape moves from the supply reel to the take-up reel.)

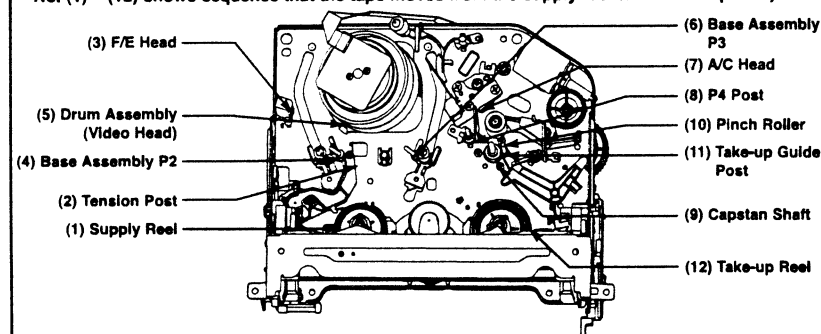


Fig. C-9-3 Tape Transport System

PROTECTION, MAINTENANCE AND CHECK OF VIDEO FUNCTION

2. Essential Check and Repair

Recording density of the video is far higher than the audio. Therefore video parts are very precise so as to allow only error of 1/1000mm or so in order to maintain compatibility with other videos. If one of these parts is polluted or old, same phenomena will appear as they are damaged. To maintain clear screen, regular check, replacement of old and damaged parts and oil supply, etc are essential.

3. Regular Check and Repair

Check and repair schedule is not constant since they vary depending on method that the consumer uses video and environment where the video is installed at. However, for the video used by common household, good screen will be maintained if regular check and repair per 1,000 hour is performed. The following chart shows relationship between using time and checking time:

Table 1

Time Requiring Checking	About 1 year	About 18 months	About 3 years
Average hours used per day			
One hour			
Two hours			
Three hours			

4. Tools for Check and Repair

- (1) Grease: Fliol G-3114 (KANTO) or equivalent grease (Green)
- (2) Grease: Kanto G-754, PL-433 (Yellow)
- (3) Alcohol (Isopropyl Alcohol)
- (4) Cleaning Patch (cloth)

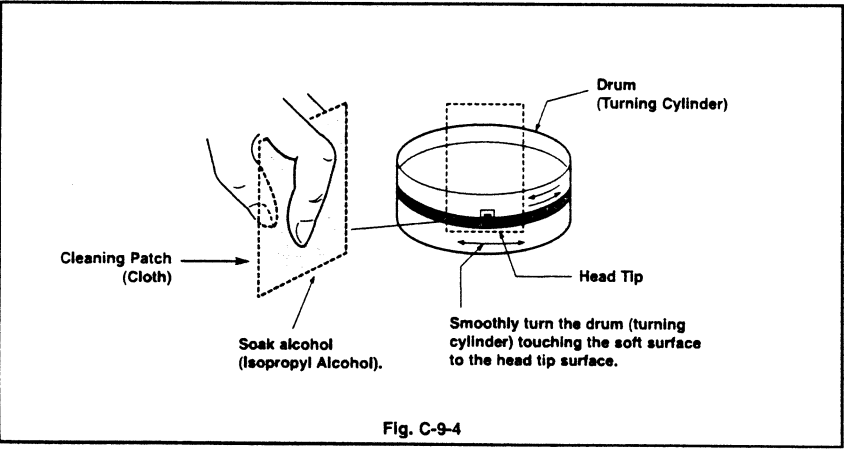
5. Maintenance Process

5-1) Removal of Foreign Material

- (1) Removal of foreign material from video head (Fig. C-9-4) Firstly try to use a cleaning tape. Use a cleaning patch if foreign materials are not removed with the cleaning tape due to severe dirty of the head. Soak the cleaning patch in alcohol and put it to the head tip. Smoothly turn the drum (turning cylinder) to the right or left (In this case, the cleaning patch must not be moved vertically). After completely drying the head, test the traveling status of the tape. If alcohol (Isopropyl Alcohol) remains at the video head, the tape may be damaged when this solution touches with the head surface.

Never use a cloth bar (commercial sale)

- (2) Wipe the tape transport system and the drive system with the cleaning patch soaked in alcohol (Isopropyl Alcohol) when removing foreign materials from them.
  - 1) The part touched with the traveling tape is called as tape transport system. The drive system consists of parts to travel the tape.
  - 2) Care must be exercised so that unreasonable force to change the pattern will be applied to the tape transport system during removal of foreign materials.



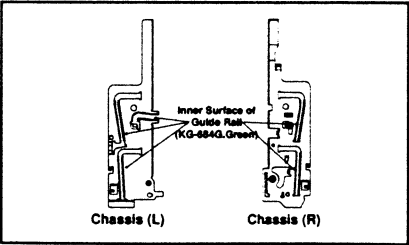
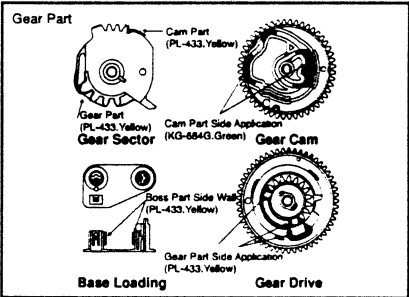
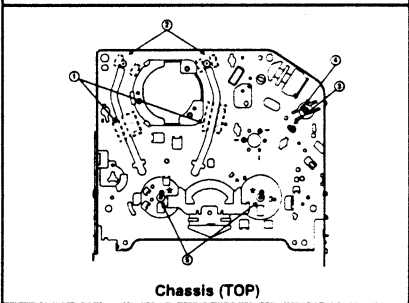
PROTECTION, MAINTENANCE AND CHECK OF VIDEO FUNCTION

5-2) Grease Applications

- (1) Grease Application Method Apply grease by using a cloth swab or brush. Care must be exercised so that excess quantity should not be used. If the excessive quantity is applied, wipe it with the gauze soaked in alcohol (Isopropyl Alcohol).

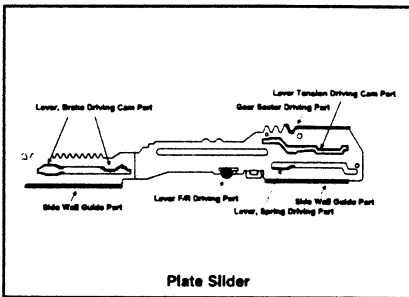
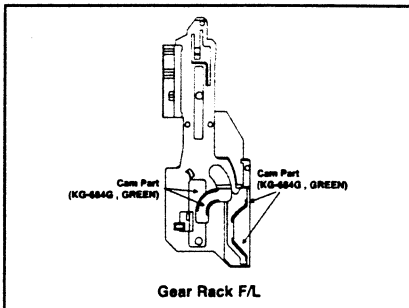
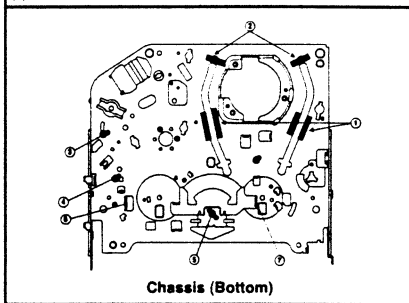
NOTE: POSITION OF GREASE APPLICATION

- (1) Inner Side Surface and Top Surface of Loading Path
- (2) Stable Adhesion Part of Base P2, P3
- (3) Arm Pinch Shaft
- (4) Gear Wheel Shaft
- (5) Reel S. T. Shaft
- (1) (2) (3) (4): KG-684G (Green)
- (5): PL-433 (Yellow)



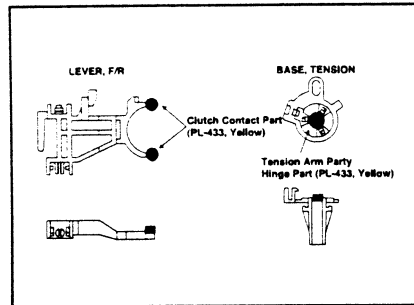
- (2) Regular Grease Application Apply grease to the designated application position every 500 hour.

- (1) Inner Side Surface and Top Surface of Loading Path
- (2) Stable Adhesion Part of Base P2, P3 Coil
- (3) Gear Cam Shaft
- (4) Gear Drive Shaft
- (5) Clutch Shaft Groove
- (6) Guide Part on the Plate Slider Side Wall (Left)
- (7) Guide Part on the Plate Slider Side Wall (Right)
- (1) (2) (3) (4) (5) (6) (7): KG-684G (Green)

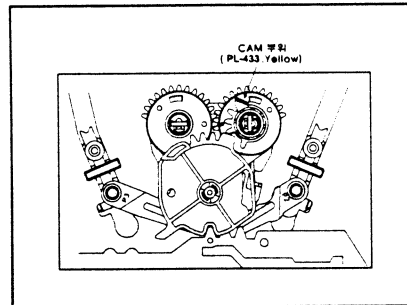


## PROTECTION, MAINTENANCE AND CHECK OF VIDEO FUNCTION

Lever, F/R, Base, Tension



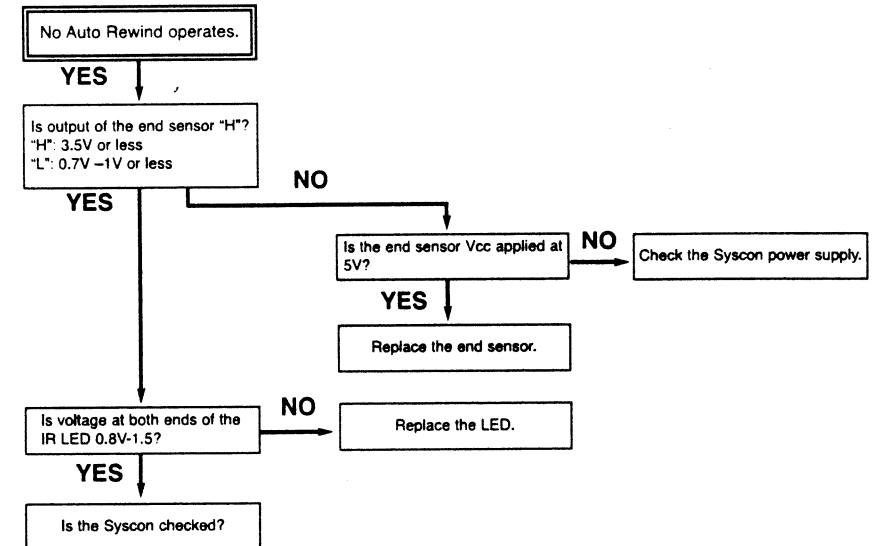
GEAR AY, P2 & P3



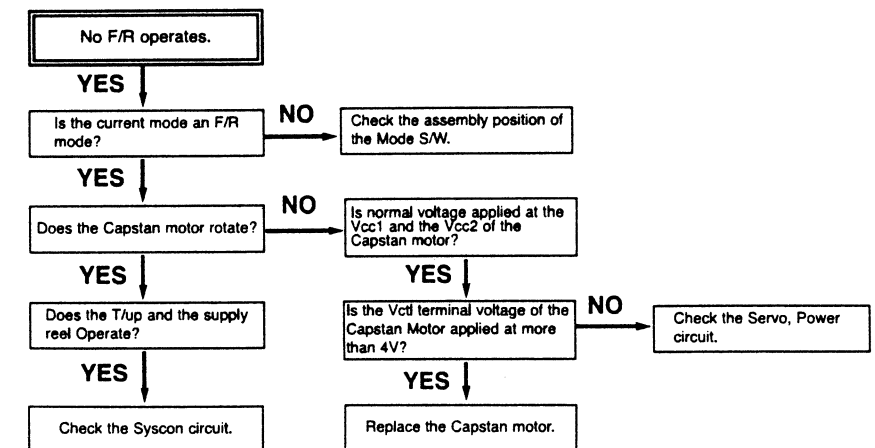
## MECHANISM TROUBLESHOOTING GUIDE

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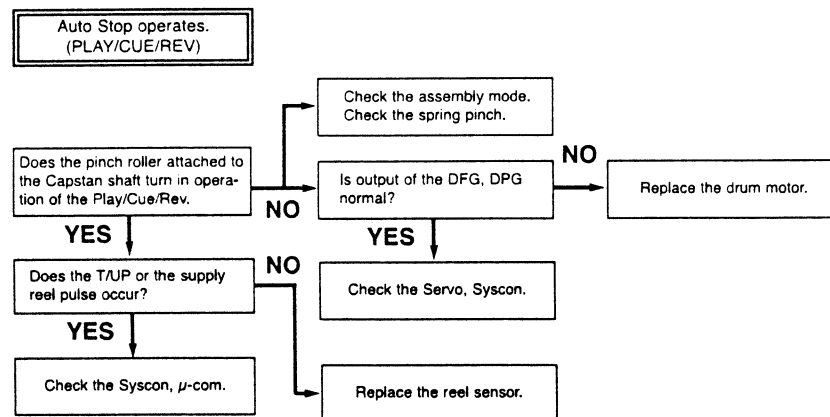


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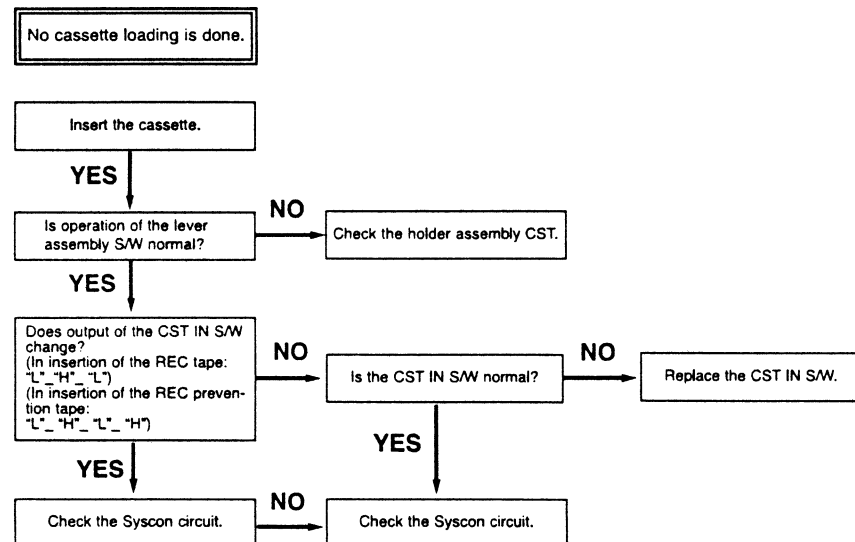


## MECHANISM TROUBLESHOOTING GUIDE

C.

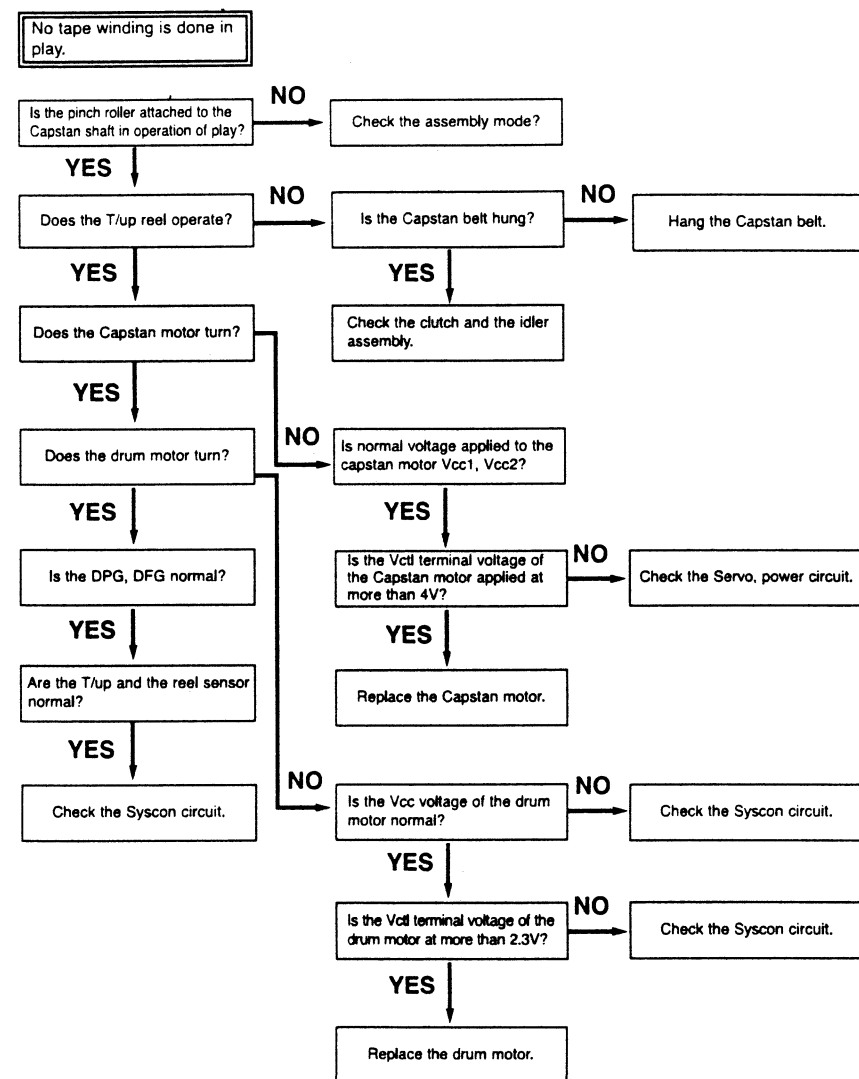


D.



## MECHANISM TROUBLESHOOTING GUIDE

E.

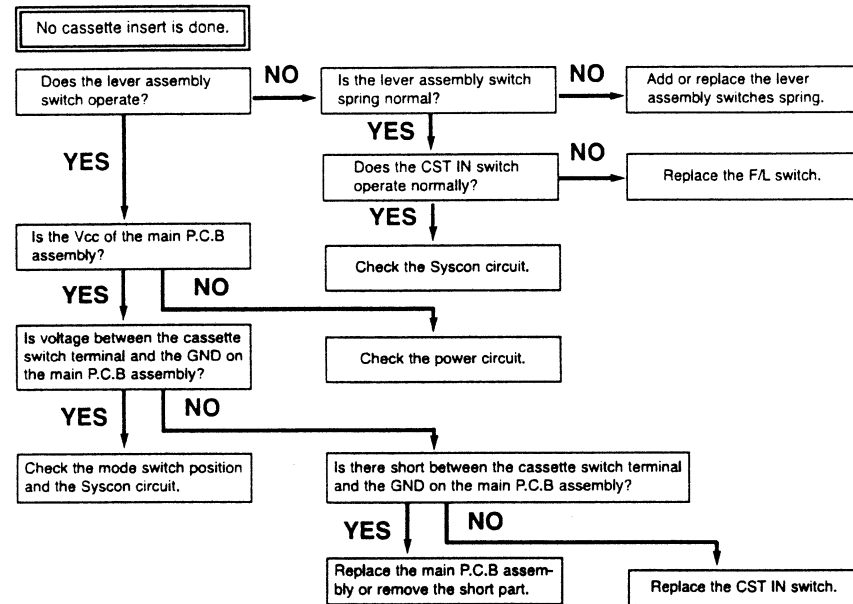




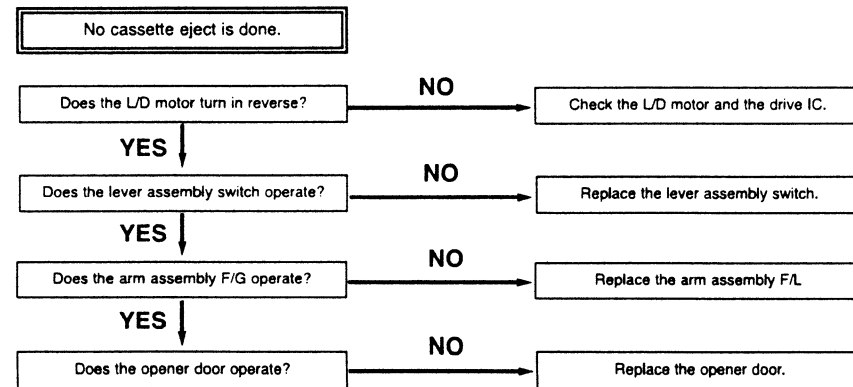
## MECHANISM TROUBLESHOOTING GUIDE

### 2. Front Loading Mechanism

A.

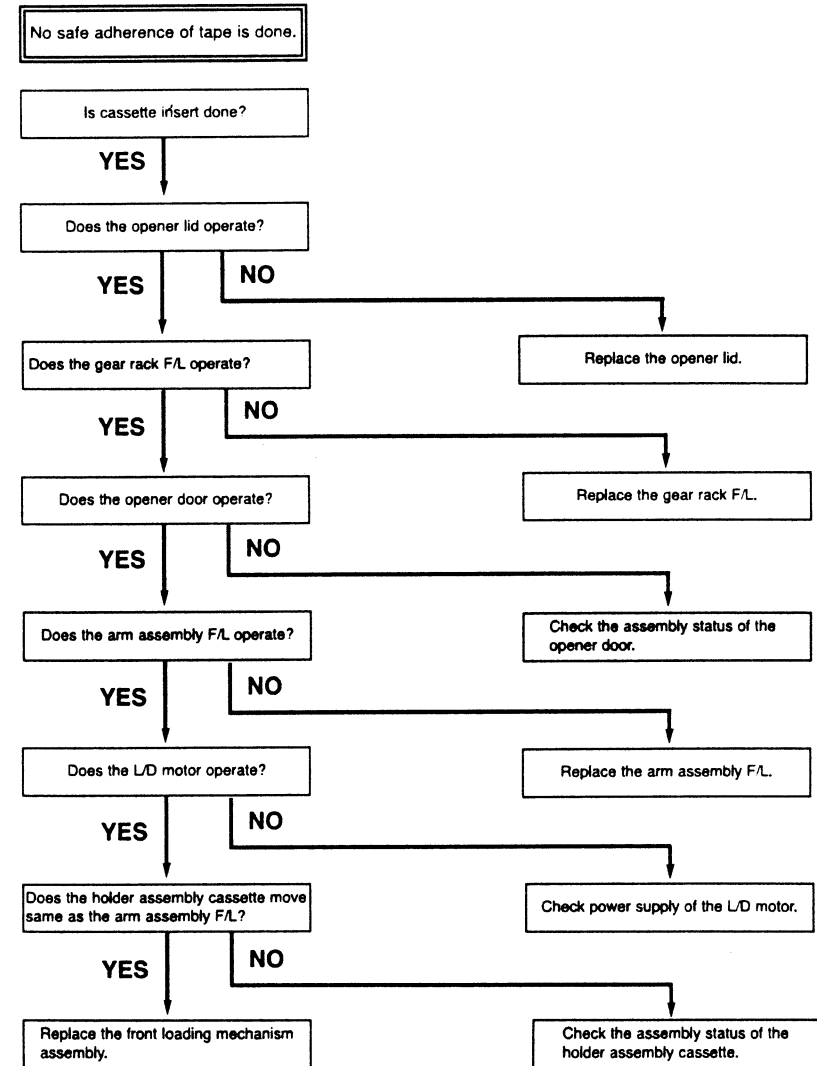


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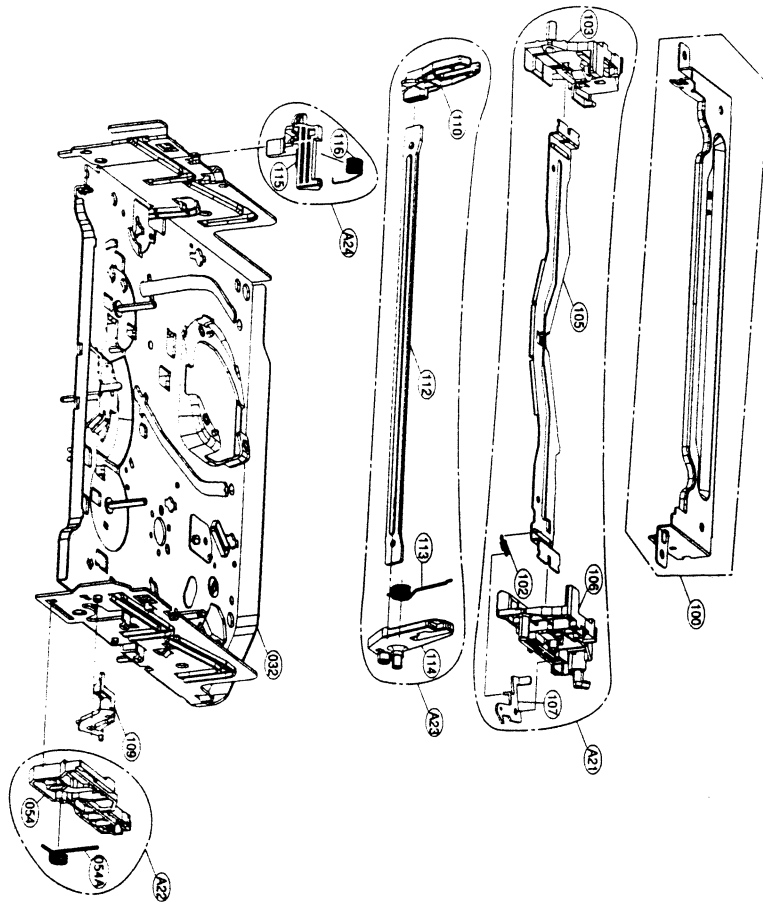
## MECHANISM TROUBLESHOOTING GUIDE

C.



## EXPLODED VIEWS

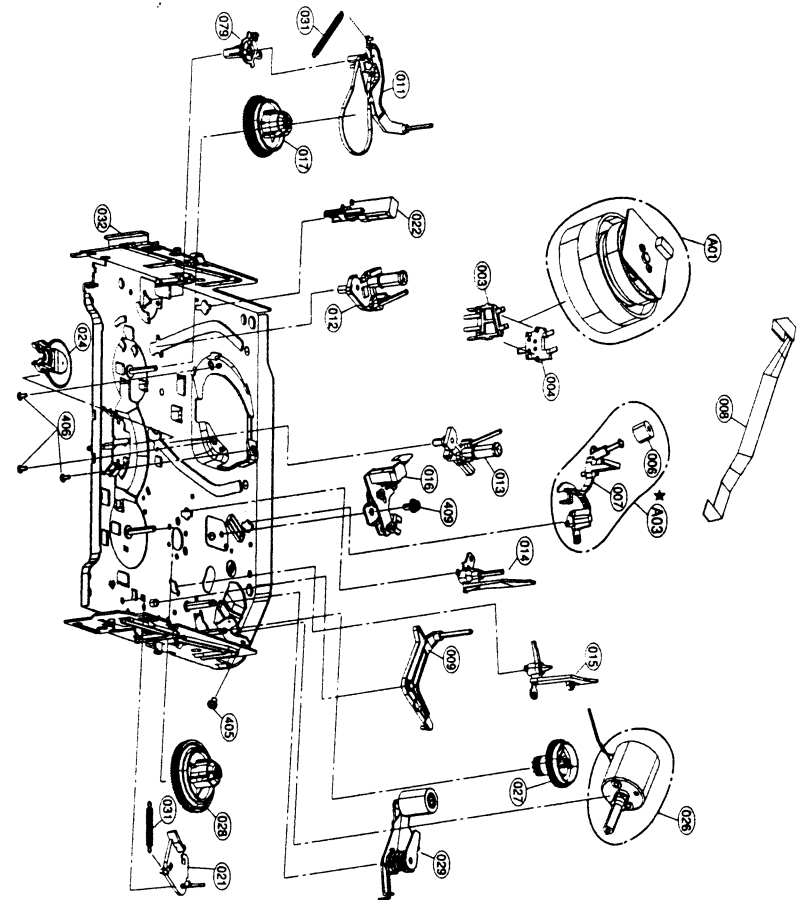
## 1. Front Loading Mechanism Section



## EXPLODED VIEWS

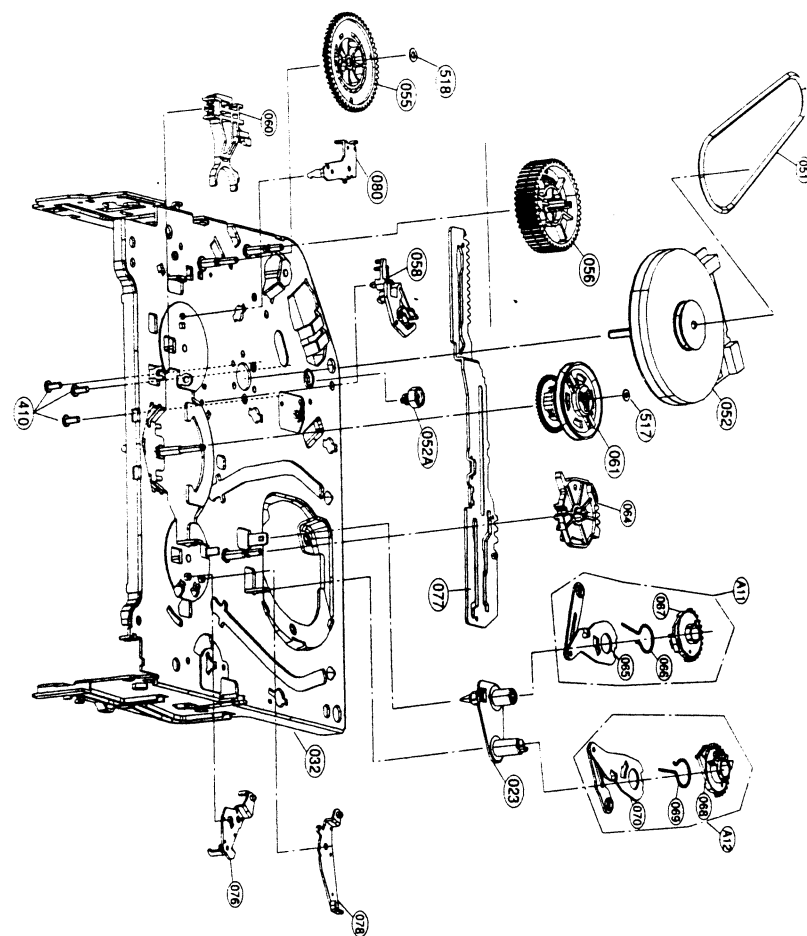
## 2. Moving Mechanism Section (1)

★ OPTIONAL PART



**EXPLODED VIEWS**

**3. Moving Mechanism Section (2)**



**MEMO**

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## SECTION 5 RL-02A LOADER PART

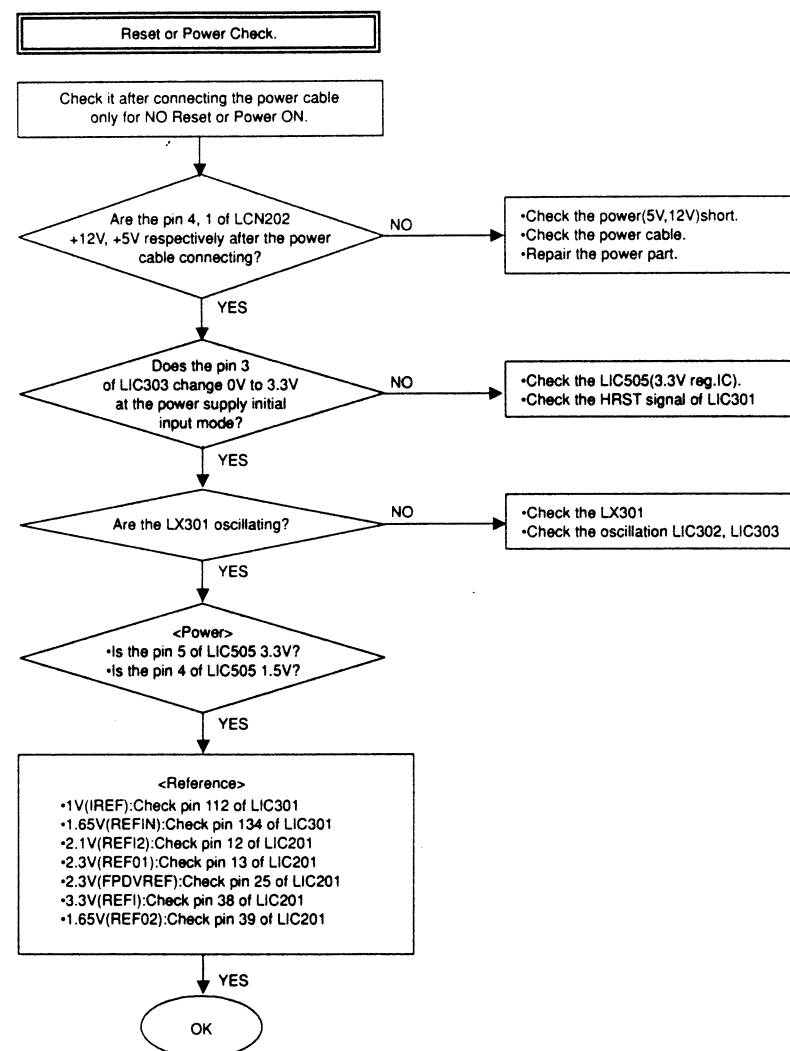
**Note:** It is not recommended for component repair on this RL-02A Loader Module but to replace the complete loader when it becomes defective.  
The information in this section is published for reference only.

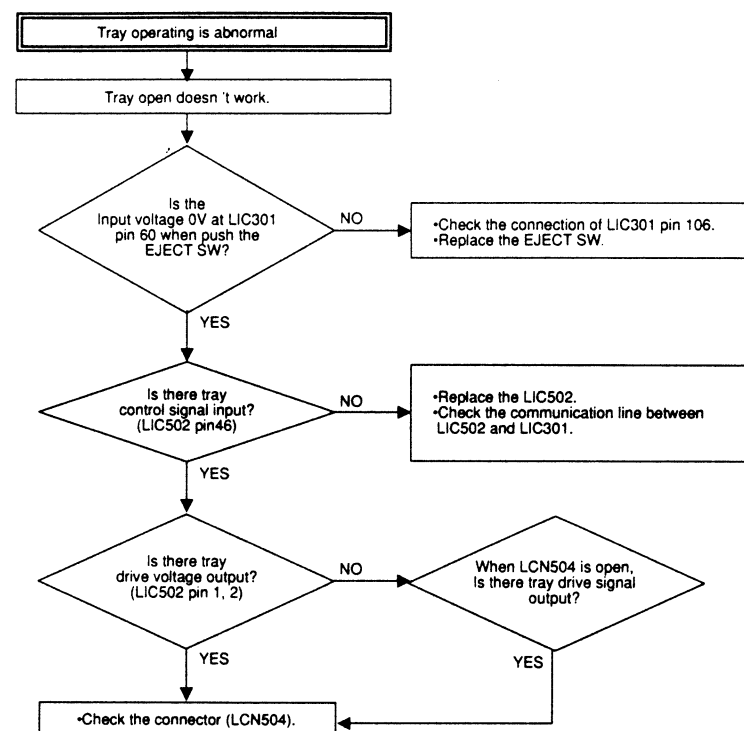
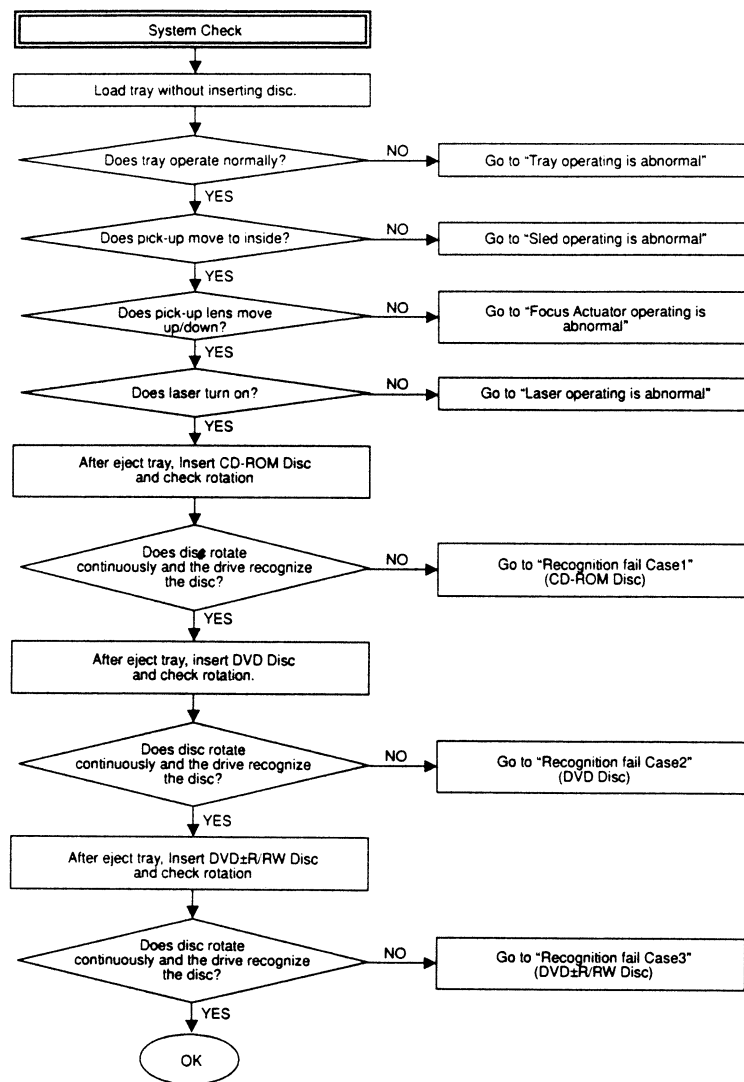
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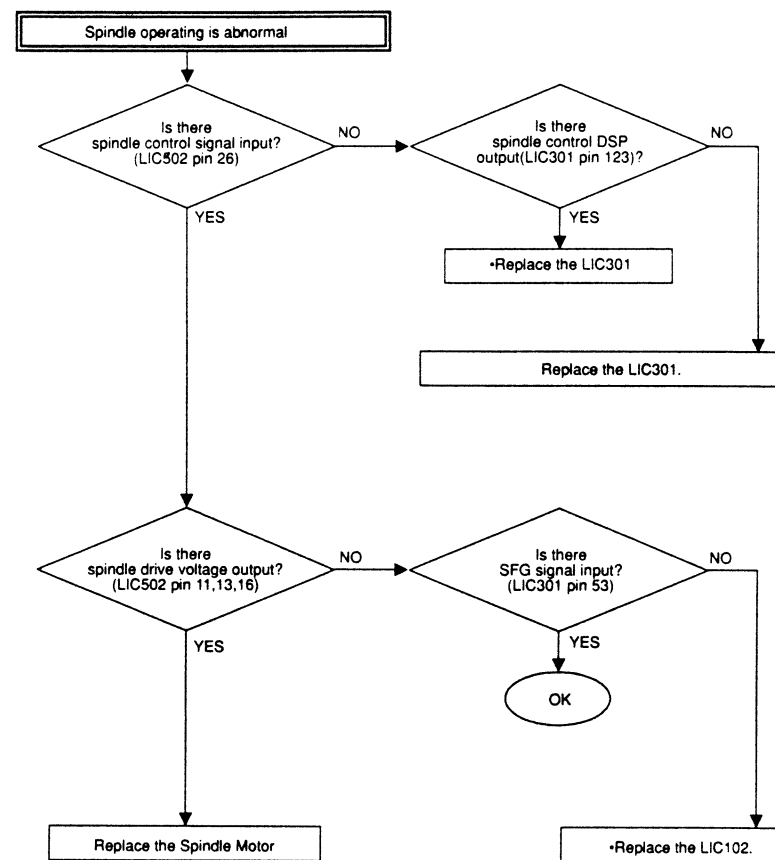
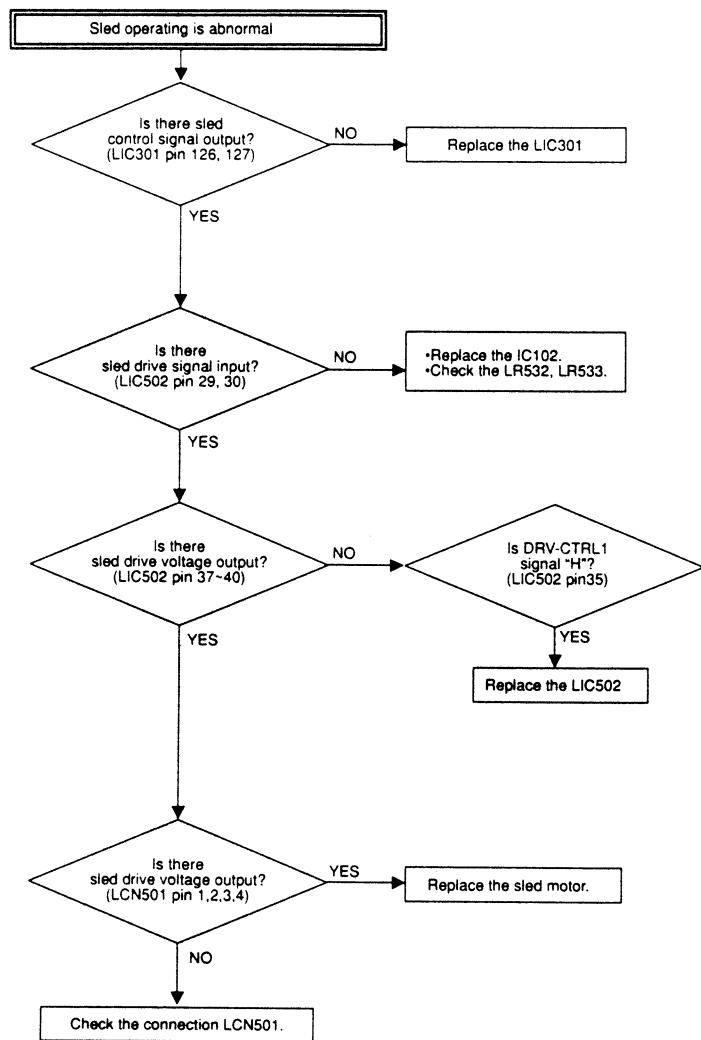
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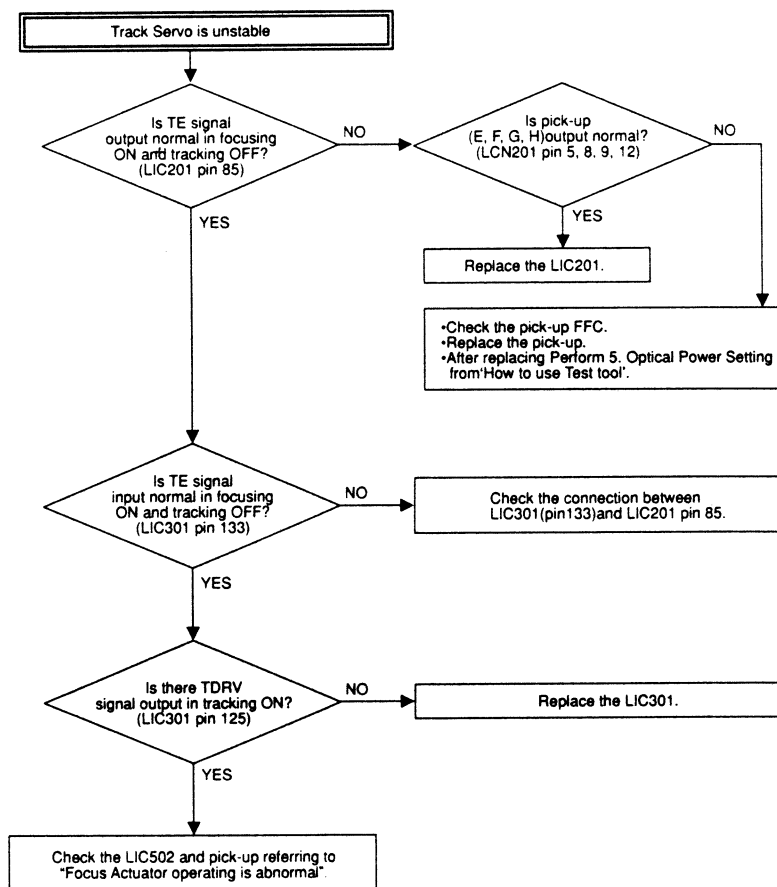
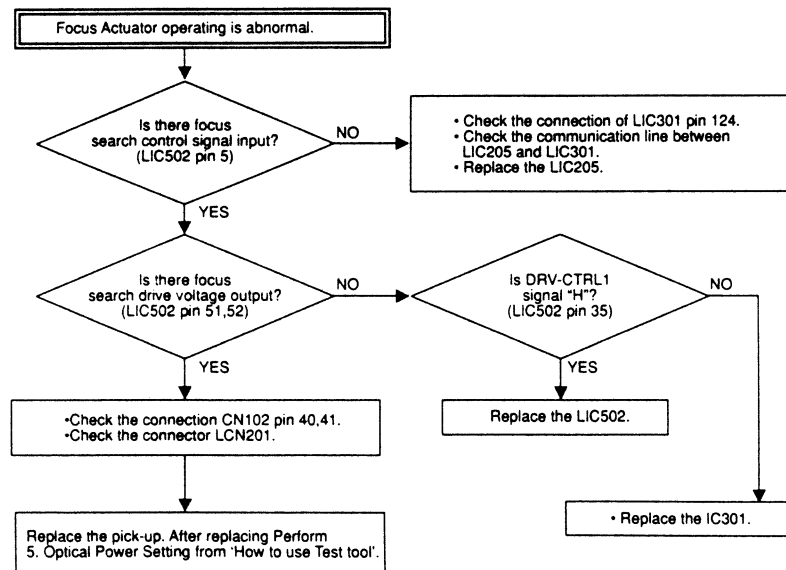
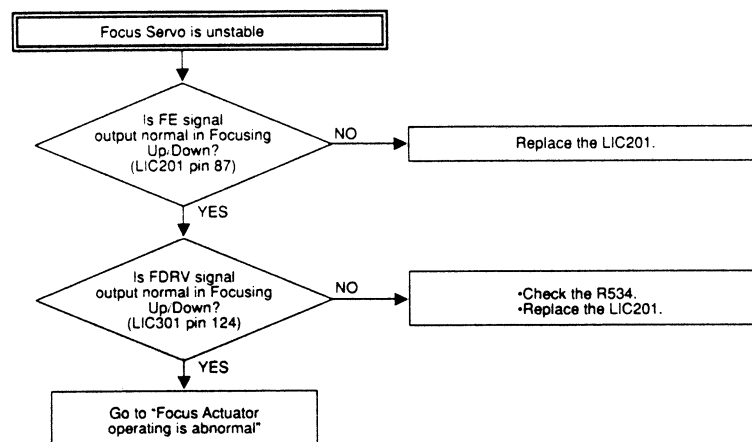
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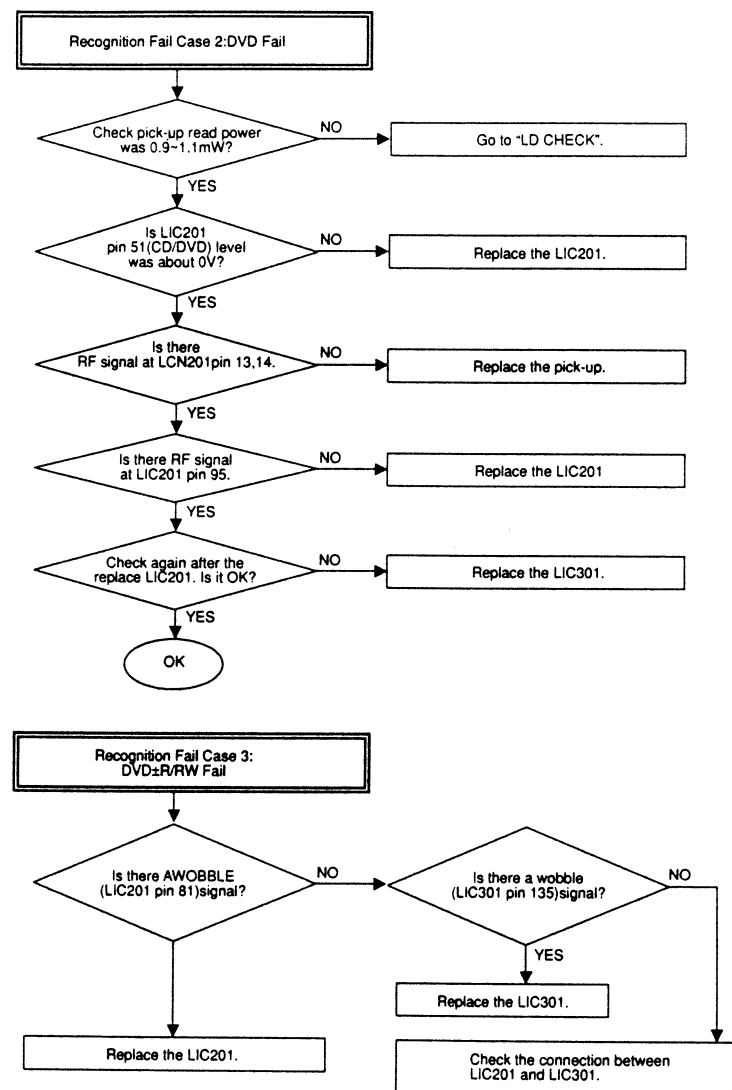
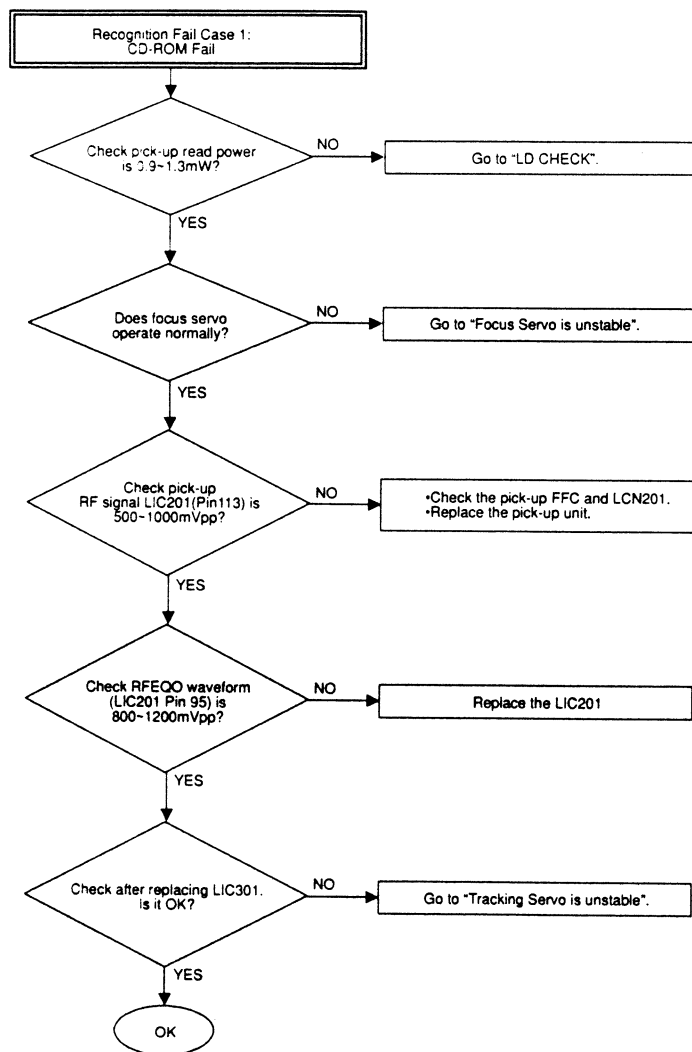
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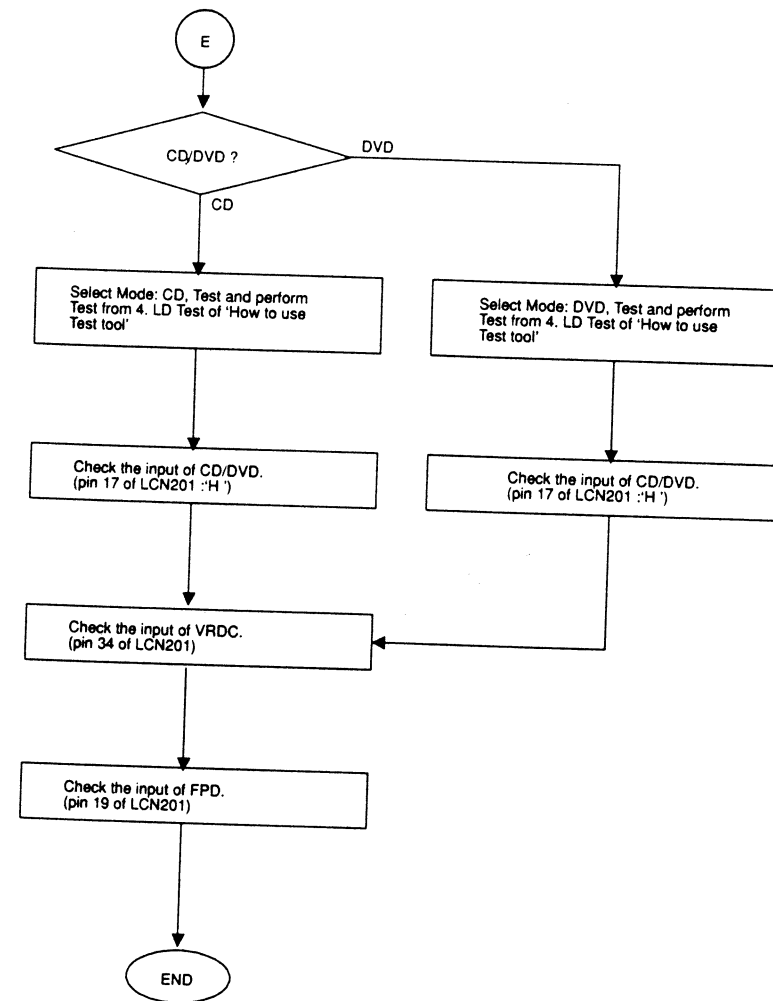
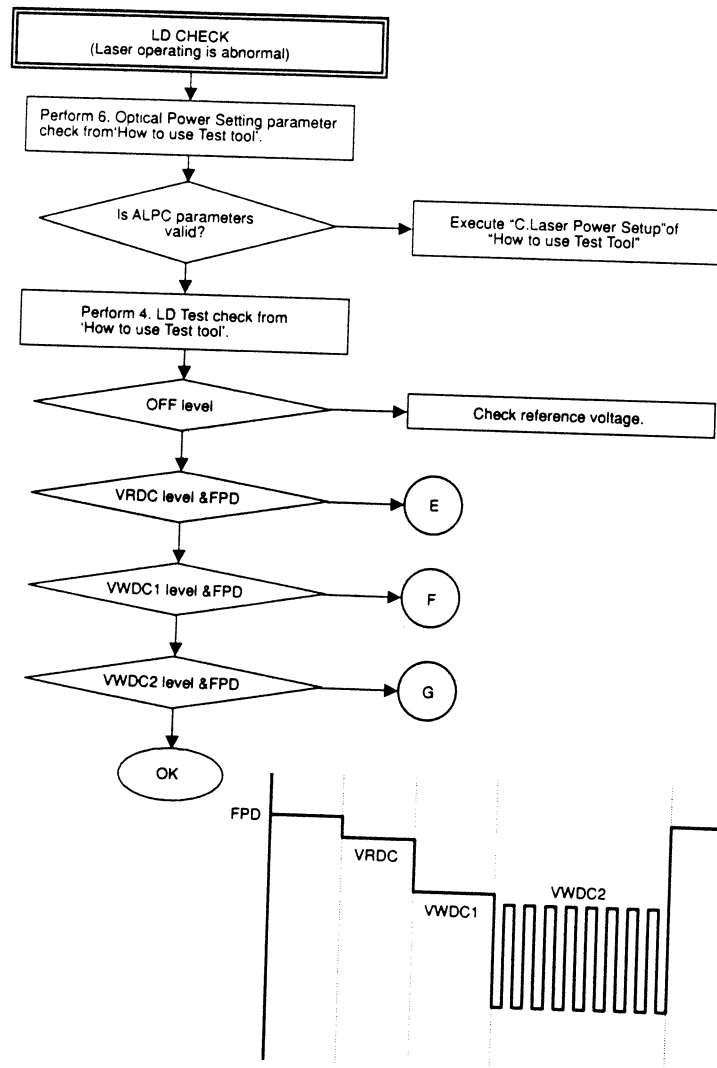


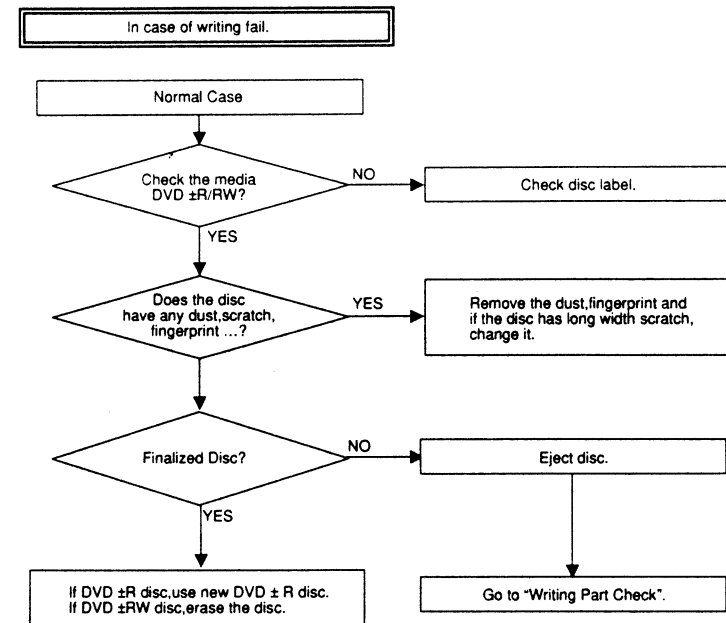
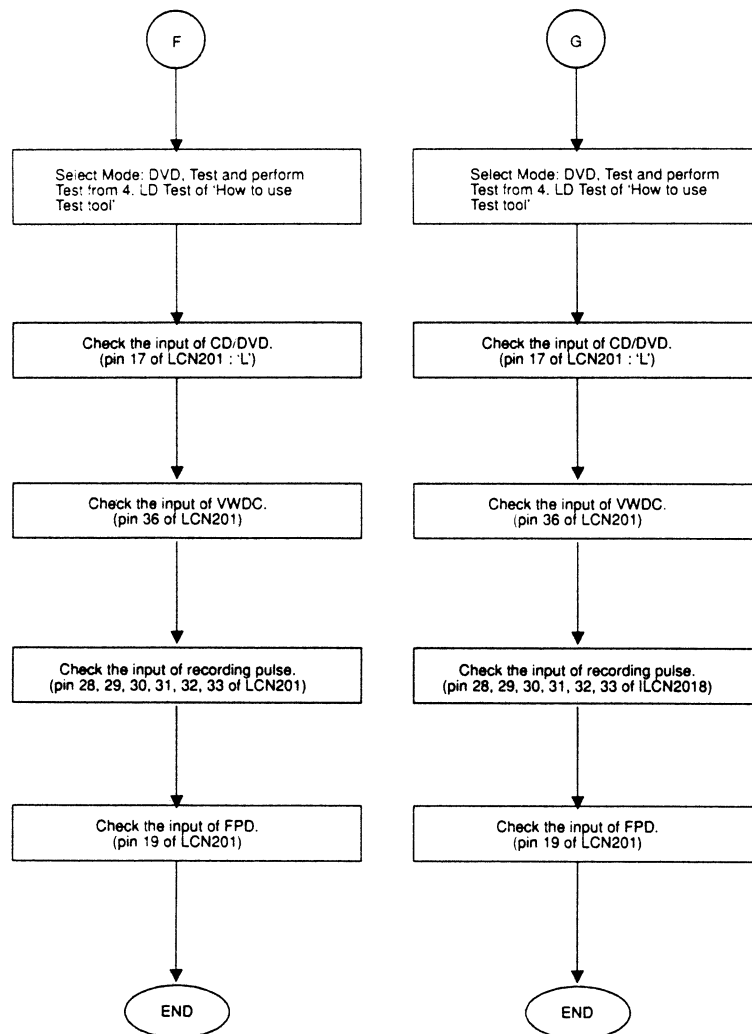


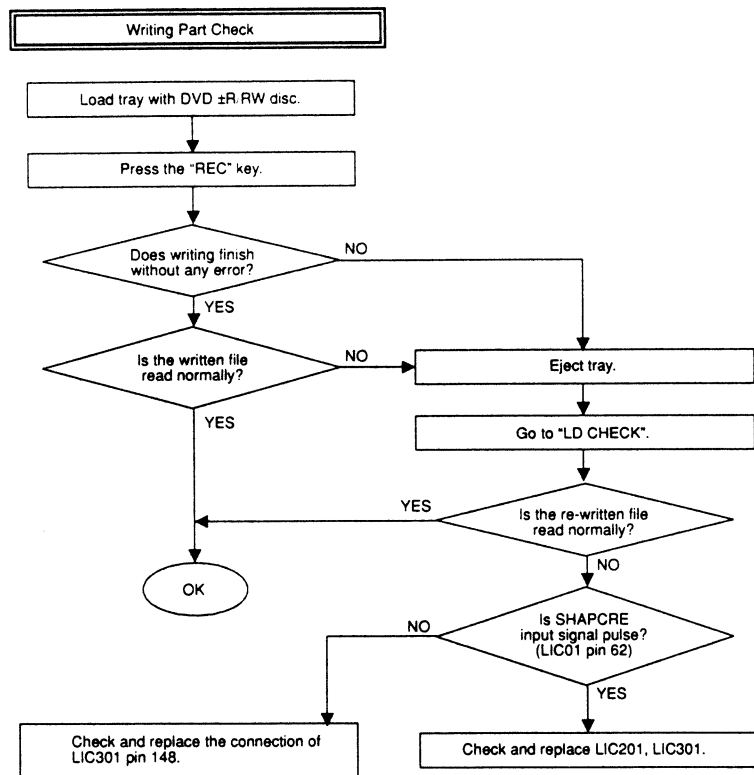






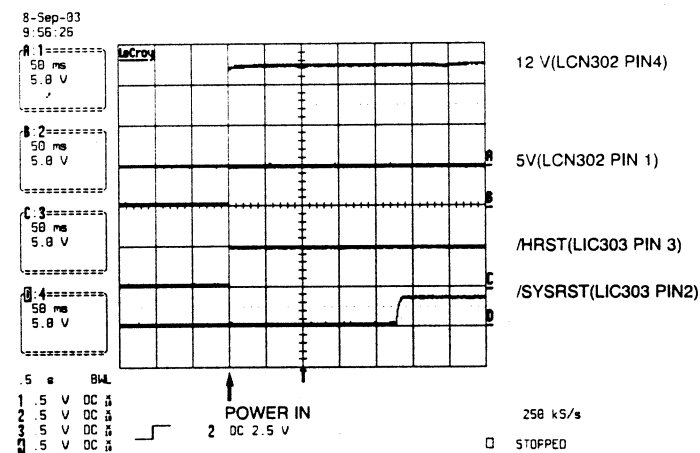




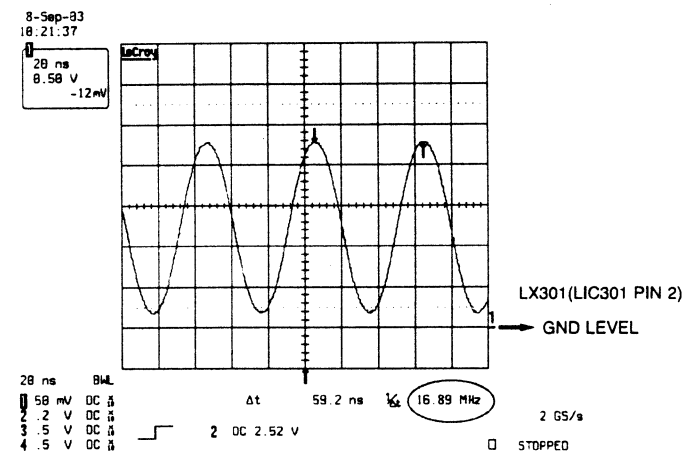


## WAVEFORMS

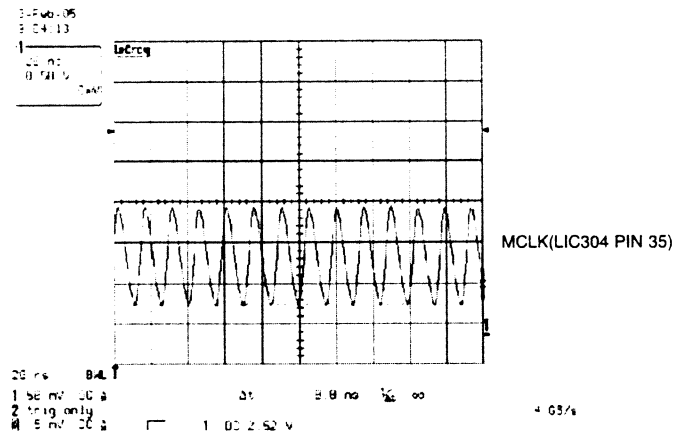
### 1. POWER & RESET Signal



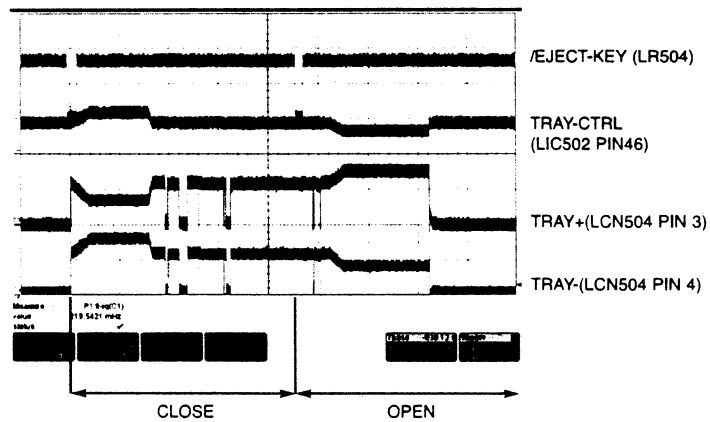
### 2. Main Clock1 for IC202 (16.9MHz)



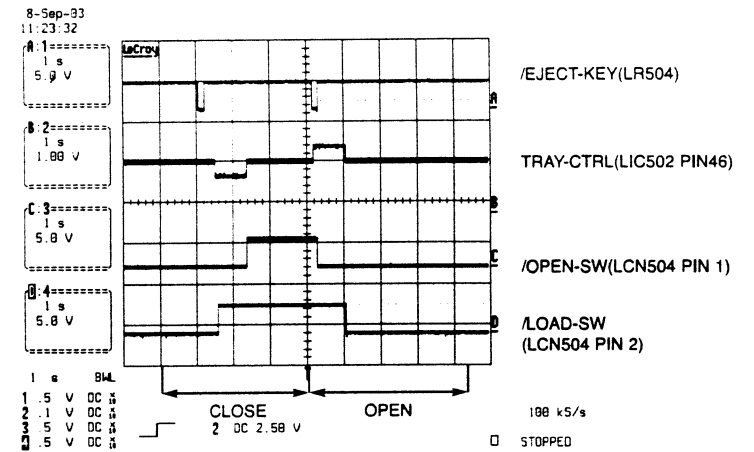
### 3. SDRAM Clock



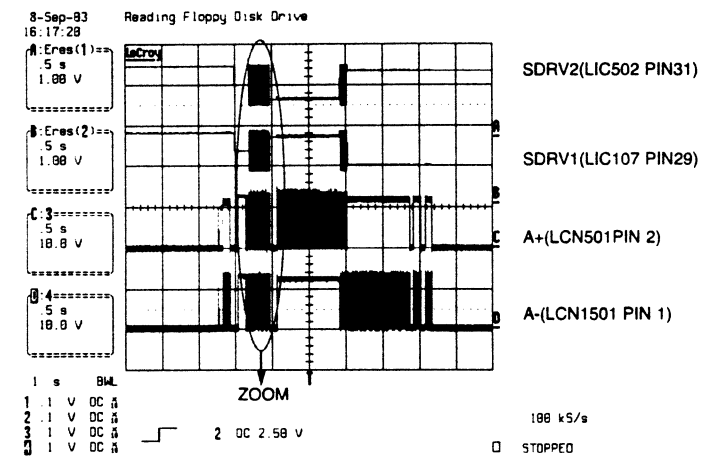
#### 4. TRAY OPEN/CLOSE SIGNAL 1



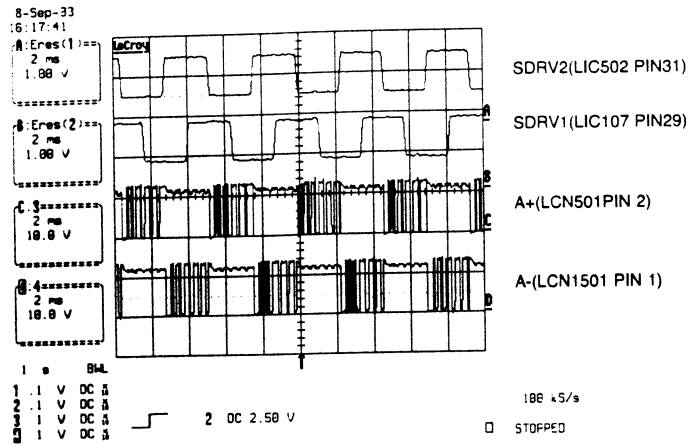
## 5. TRAY OPEN/CLOSE SIGNAL 2



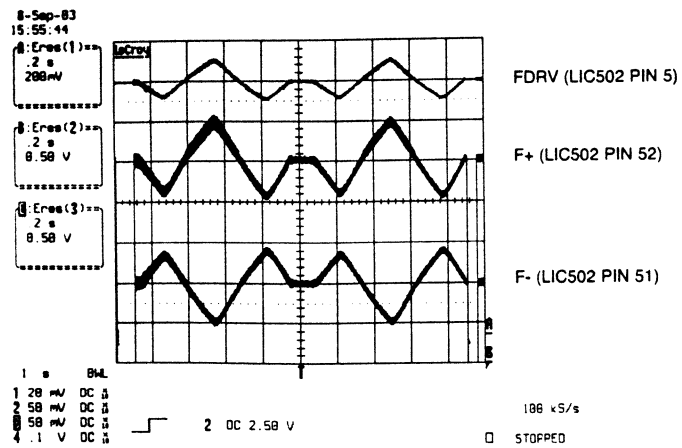
## 6. SLED MOVE SIGNAL 1



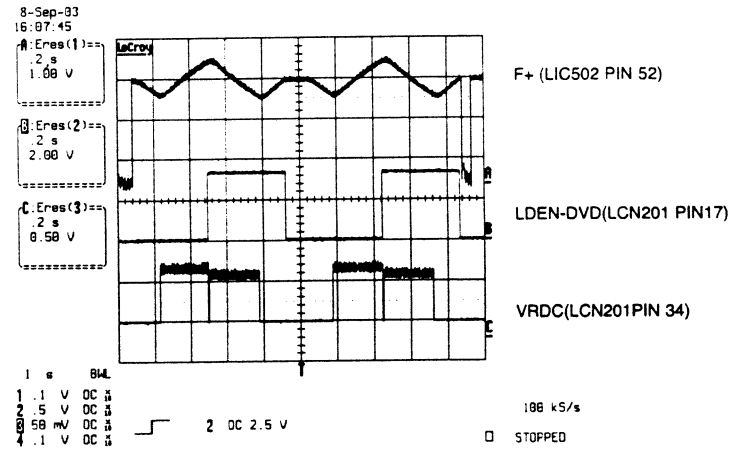
## 7. SLED MOVE SIGNAL 2



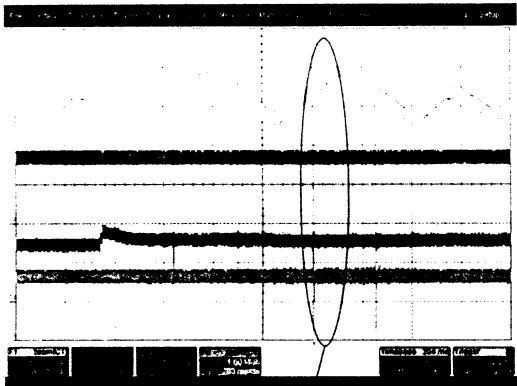
## 8. FOCUS SEARCH SIGNAL



## 9. LASER TURN ON SIGNAL

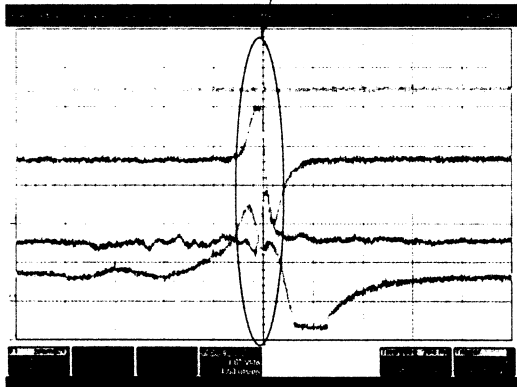


10. DISC TYPE JUDGEMENT WAVEFORM (CD SERIES)



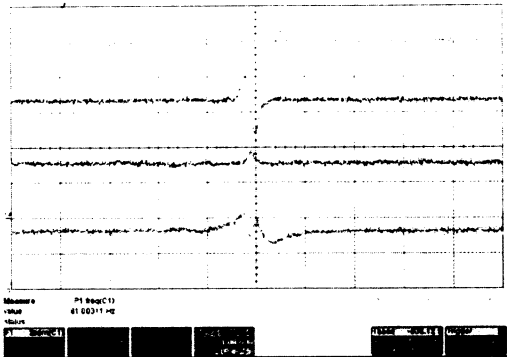
FDRV(LIC502 PIN 5)  
FE(LIC201 PIN87)  
TE(LIC201 PIN85)  
RF(LIC201PIN 113)

11. DISC TYPE JUDGEMENT WAVEFORM (CD&CD-R)



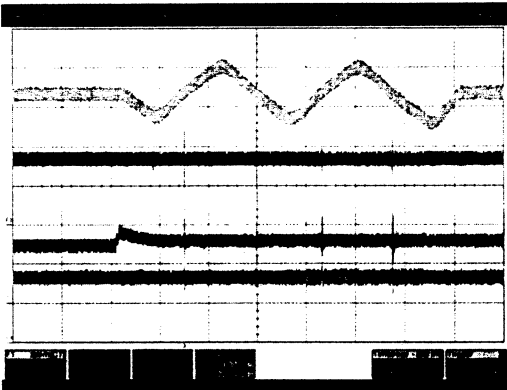
FDRV(LIC502 PIN 5)  
FE(LIC201 PIN87)  
TE(LIC201 PIN85)  
RF(LIC201PIN 113)

12. DISC TYPE JUDGEMENT WAVEFORM (CD-RW)



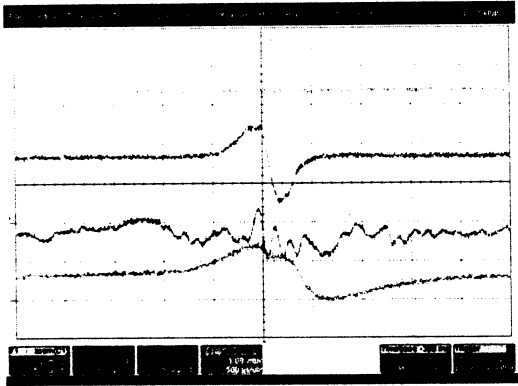
FDRV(LIC502 PIN 5)  
FE(LIC201 PIN87)  
TE(LIC201 PIN85)  
RF(LIC201PIN 113)

13. DISC TYPE JUDGEMENT WAVEFORM (DVD SERIES)



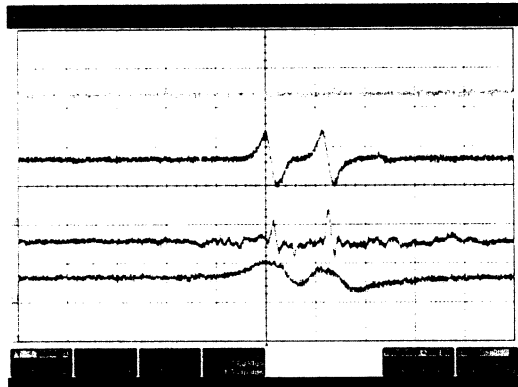
FDRV(LIC502 PIN 5)  
FE(LIC201 PIN87)  
TE(LIC201 PIN85)  
RF(LIC201PIN 113)

14. DISC TYPE JUDGEMENT WAVEFORM (DVD\_SINGLE&R)



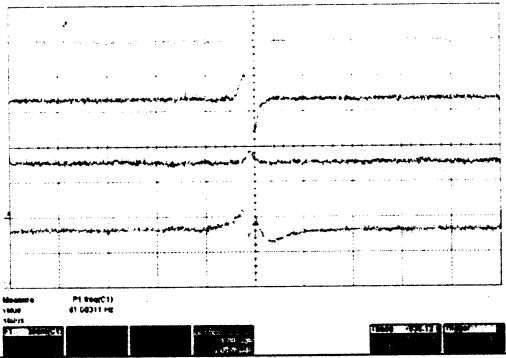
FDRV(LIC502 PIN 5)  
FE(LIC201 PIN87)  
TE(LIC201 PIN85)  
RF(LIC201PIN 113)

15. DISC TYPE JUDGEMENT WAVEFORM (DVD\_DUAL)



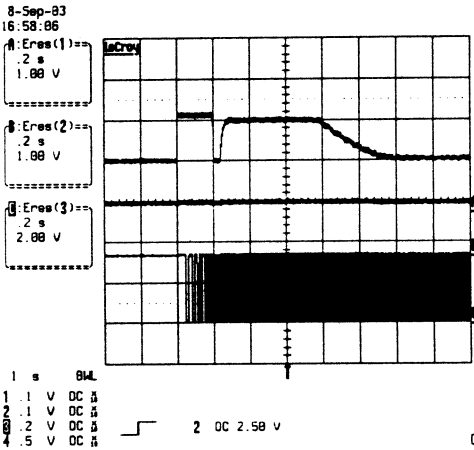
FDRV(LIC502 PIN 5)  
FE(LIC201 PIN87)  
TE(LIC201 PIN85)  
RF(LIC201PIN 113)

16. DISC TYPE JUDGEMENT WAVEFORM (DVDRW)



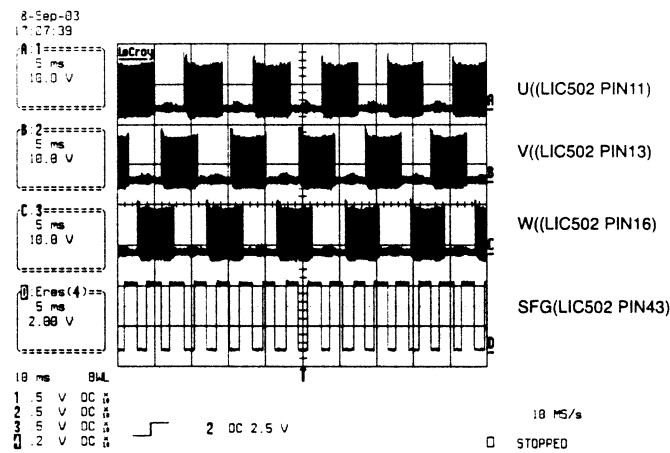
FDRV(LIC502 PIN 5)  
FE(LIC201 PIN87)  
TE(LIC201 PIN85)  
RF(LIC201PIN 113)

17. SPINDLE WAVEFORM1

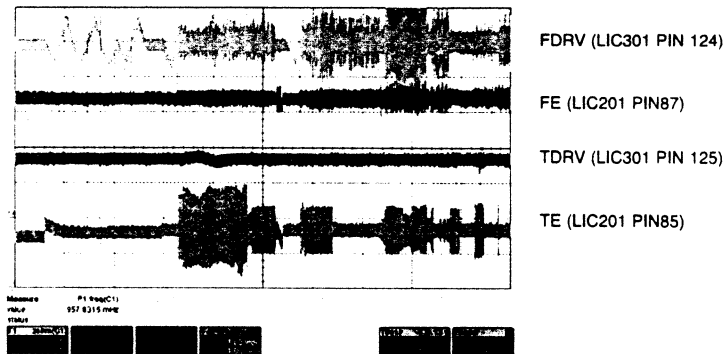


MDRV (LIC502 PIN 26)  
REFOUT (LIC502 PIN 42)  
SFG((LIC502 PIN43)

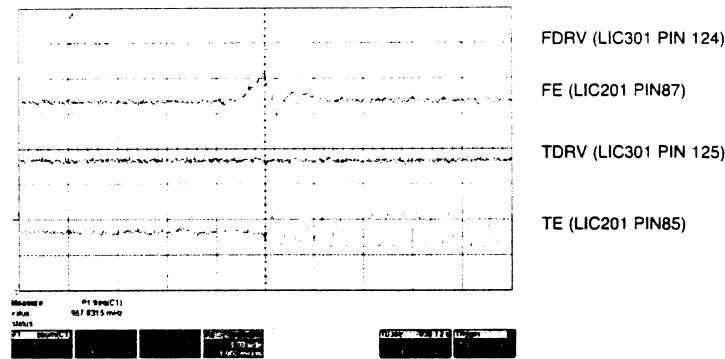
18. SPINDLE WAVEFORM2



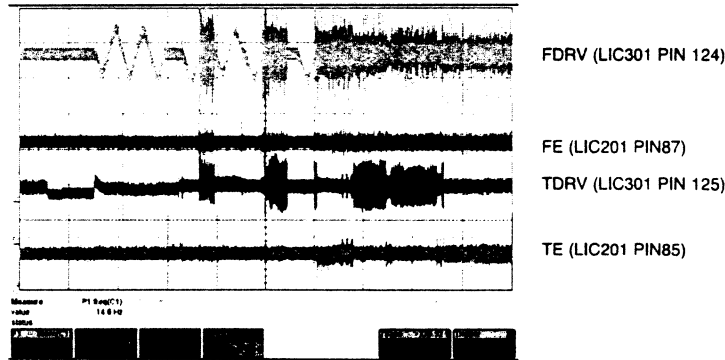
19. FOCUS ON SIGNAL(CD)



20. FOCUS ON SIGNAL(CD)

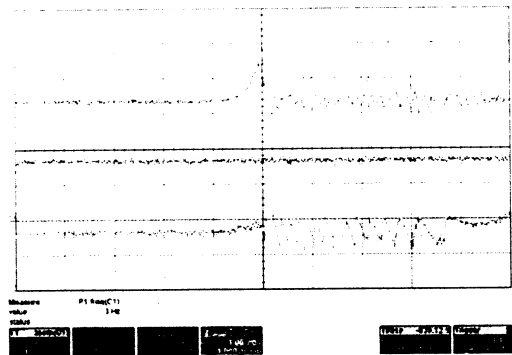


21. FOCUS ON SIGNAL(DVD)



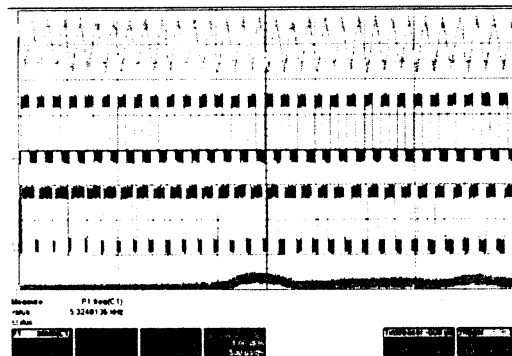


22. FOCUS ON SIGNAL (DVD)



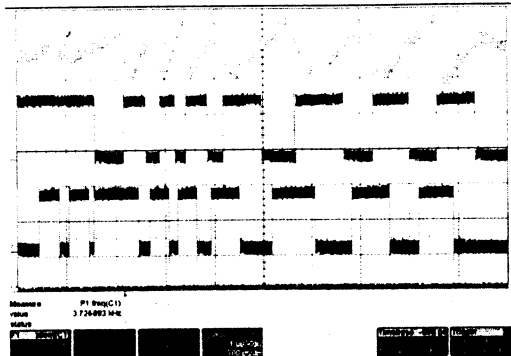
FDRV (LIC301 PIN 124)  
FE (LIC201 PIN87)  
TDRV (LIC301 PIN 125)  
TE (LIC201 PIN85)

23. TRACK OFF SIGNAL(CD)



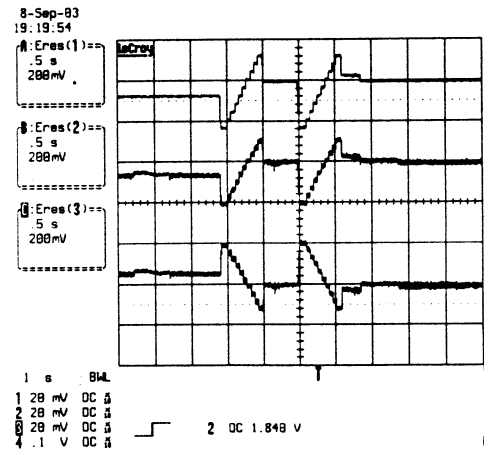
TE (LIC106 PIN85)  
TZC(LIC106 PIN74)  
MIRRBGA(LIC106 PIN77)

24. TRACK OFF SIGNAL(DVD)



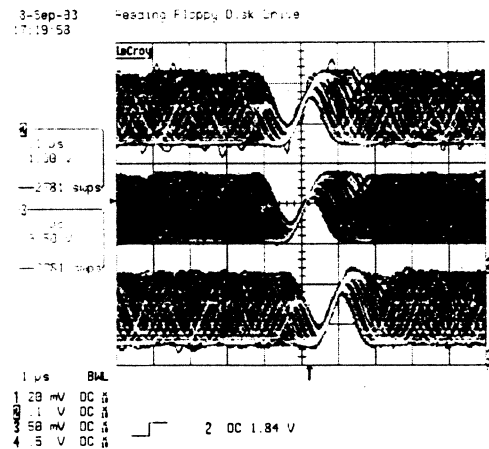
TE (LIC106 PIN85)  
TZC(LIC106 PIN74)  
MIRRBGA(LIC106 PIN77)

25. Tilt Driver signal(Disc reading)



TILTD RV(LIC502 PIN47)  
TILT+(LIC502 PIN50)  
TILT-(LIC502 PIN49)

## 26. RF WAVEFORM(DVD)



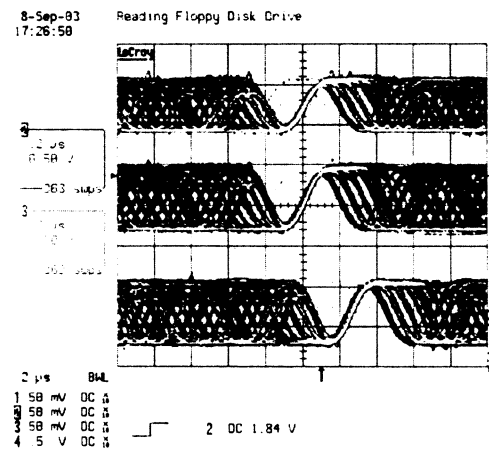
RFP(LIC201 PIN2)

RFO(LIC201PIN 113)

RFI(LIC201 PIN 95)

2 GS/s  
STOPPED

## 27. RF WAVEFORM(CD)



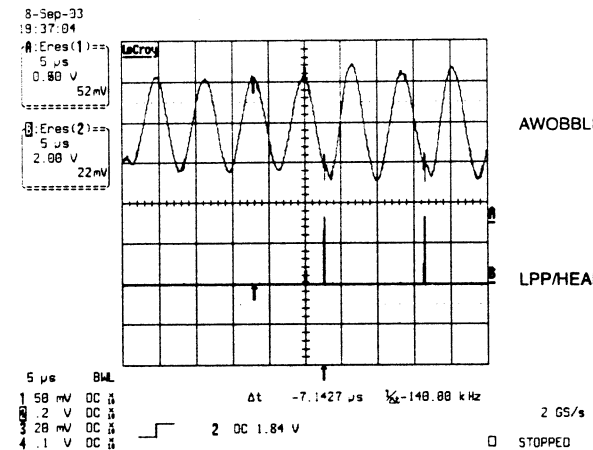
RFP(LIC201 PIN2)

RFO(LIC201PIN 113)

RFI(LIC201 PIN 95)

2 GS/s  
STOPPED

## 28. WOBBLE(DVD-R/RW)\_READING

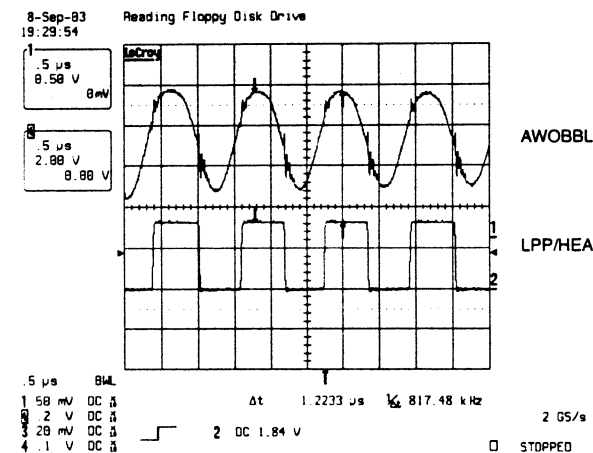


AWOBLE(LIC201 PIN81)

LPP/HEAD(LIC201 PIN 73)

2 GS/s  
STOPPED

## 29. WOBBLE(DVD+R/RW)\_READING& WRITING => X1 SPEED

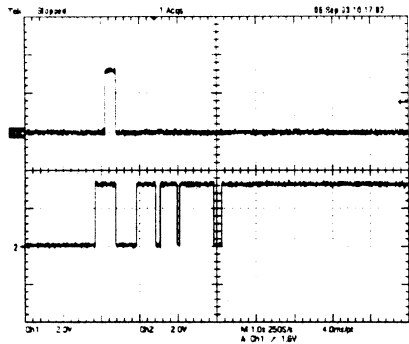


AWOBLE(LIC201 PIN81)

LPP/HEAD(LIC201 PIN 73)

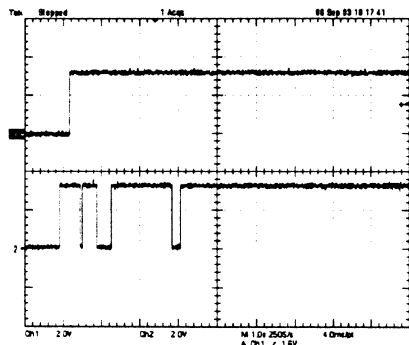
2 GS/s  
STOPPED

30. LD Enable(DVD)



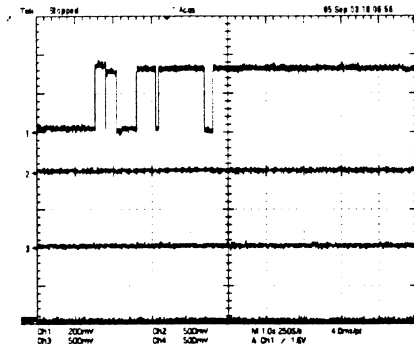
CD/DVD(LCN201 PIN 17)  
LDEN(LCN PIN 38)

31. LD Enable(CD)



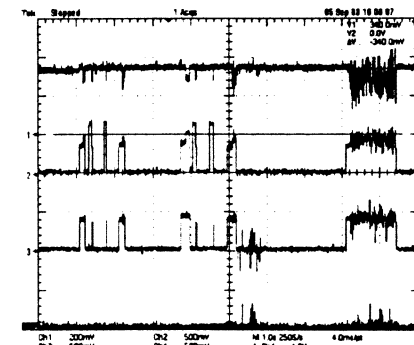
CD/DVD(LCN201 PIN 17)  
LDEN(LCN102 PIN 38)

32. Laser Power(reading) \_ DVD+RW



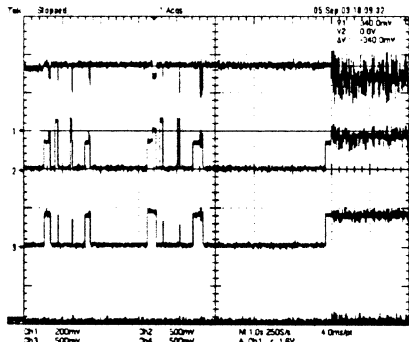
VRDC(LCN201 PIN 34)  
VWDC(LCN201 PIN 36)  
VWDC2(LCN201 PIN 35)  
OPCTRG(LIC301 PIN 151)

33. Laser Power(Erase) \_ DVD+RW



VRDC(LCN201 PIN 34)  
VWDC(LCN201 PIN 36)  
VWDC2(LCN201 PIN 35)  
OPCTRG(LIC301 PIN 151)

34. Laser Power(Writing) \_ initial state



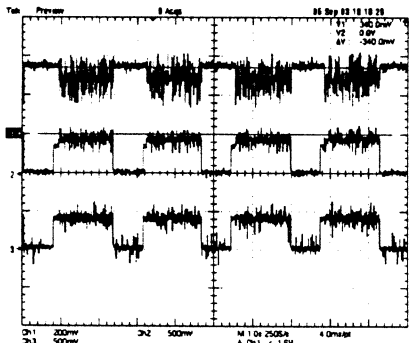
VRDC(LCN201 PIN 34)

VWDC(LCN201 PIN 36)

VWDC2(LCN102 PIN 35)

OPCTRG(LIC301 PIN 151)

35.Laser Power(Writing)\_Processing



VRDC(LCN201 PIN 34)

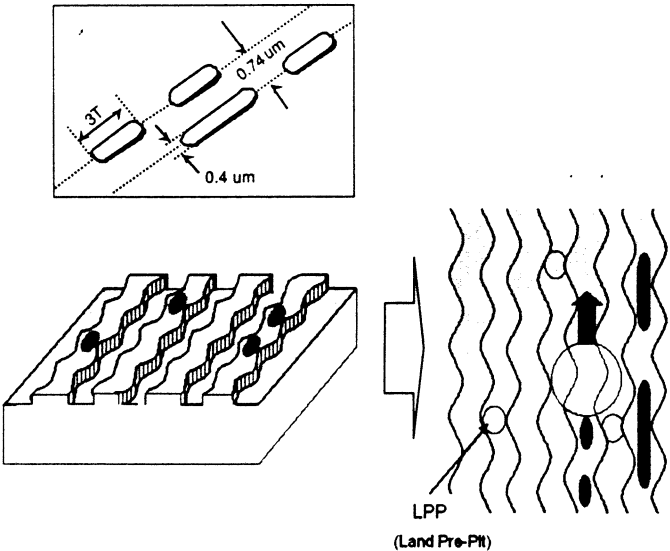
VWDC(LCN201 PIN 36)

VWDC2(LCN201 PIN 35)

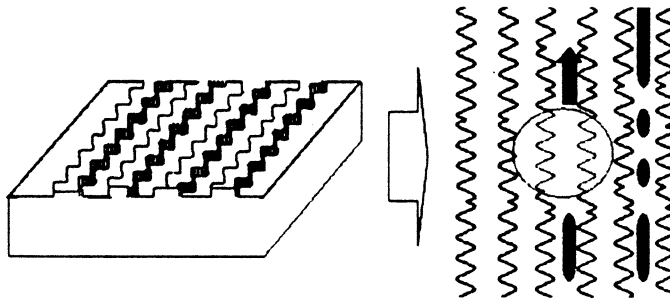
The difference of DVD-R/RW, DVD+R/RW discs and DVD-ROM

1. Recording Layer

• DVD-ROM (Read Only Disc)



• DVD+R/RW Disc

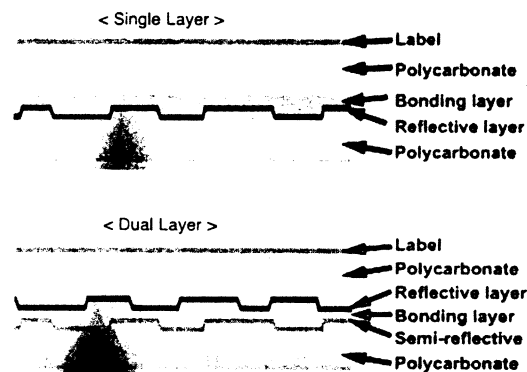


## 2. Disc Specification

	DVD-ROM		DVD-R	DVD-RW	DVD+R	DVD+RW
	Single-Layer	Dual-Layer				
Media Type	Read Only	Read Only	Dye	Phase change	Dye	Phase change
User data capacity	4.7GB	8.54GB	4.7GB	4.7GB	4.7GB	4.7GB
Wavelength	650nm	650nm	650nm	650nm	650nm	650nm
Reflectivity	45~85%	18~30nm	45~85%	18~30%	45~85%	18~30nm
Track pitch	0.74μm	0.74μm	0.74μm	0.74μm	0.74μm	0.74μm
Minimum pit length	0.4μm	0.4μm	0.4μm	0.4μm	0.4μm	0.4μm
Modulation	>0.6	>0.6	>0.6	>0.6	>0.6	>0.6
Channel bit-rate	26.16MHz	26.16MHz	26.16MHz	26.16MHz	26.16MHz	26.16MHz
Wobble Frequency	—	—	140KHz	140KHz	817.4KHz	817.4KHz
Addressing	26.16MHz	26.16MHz	Wobble & LPP	Wobble & LPP	Wobble(ADIP)	Wobble(ADIP)
Read Power (mW)					0.7 ± 0.1	0.7 ± 0.1
Write Power (mW)	—					
Jitter	<8%	<8%	<8%	<8%	<9%	<9%

## 3. Disc Materials

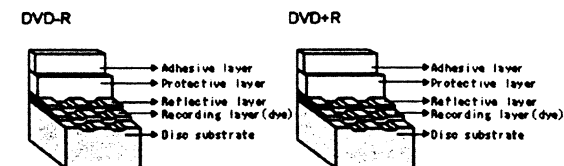
### 1) DVD-ROM



### 2) Recording format using organic dye material ( DVD-R / DVD+R )

The format that records data through the creation of recorded marks by changing the organic dye material with a laser beam.

#### ► Disc structure



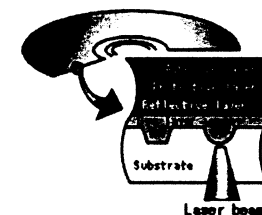
#### ► Recording principles

##### [ Recording ]

Recording is done by changing the organic dye layer and the substrate with a laser. When a strong laser is applied to a disc, the temperature of the organic dye material goes up, the dye is decomposed and the substrate changes at the same time. At this time, a durable bit is created as is the case with a CD-ROM.

##### [ Playback ]

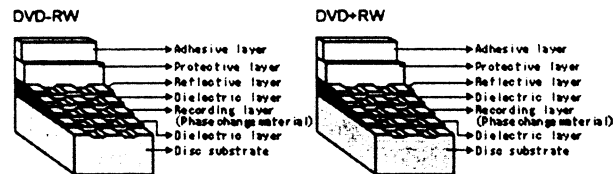
Signals are read with the differences of the reflection of a laser from pits.



### 3) Recording format using phase-change recording material ( DVD-RW / DVD+RW )

• Data is recorded by changing the recording layer from the amorphous status to the crystalline status, and played back by reading the difference of the reflection coefficient.  
Amorphous : Non-crystalline.

► Disc structure



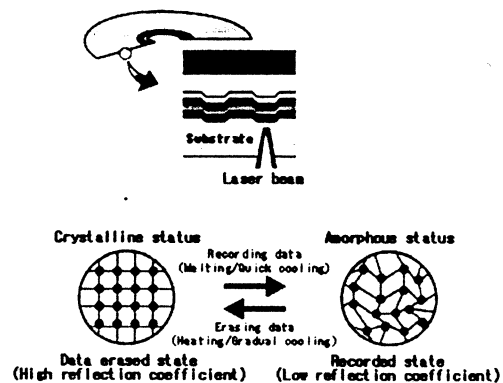
► Recording principles

#### [ Recording ]

When a high-power laser is applied to the recording material, it melts and then becomes amorphous with a low reflection coefficient when it quickly cools off. When a mid-power laser is applied to heat gradually the recording material and then gradually cools it off, it becomes crystal with a high reflection coefficient.

#### [ Playback ]

A low-power laser is used for playback. The amount of reflected light depends on the status (amorphous or crystalline) of the recording material. This is detected by an optical sensor.

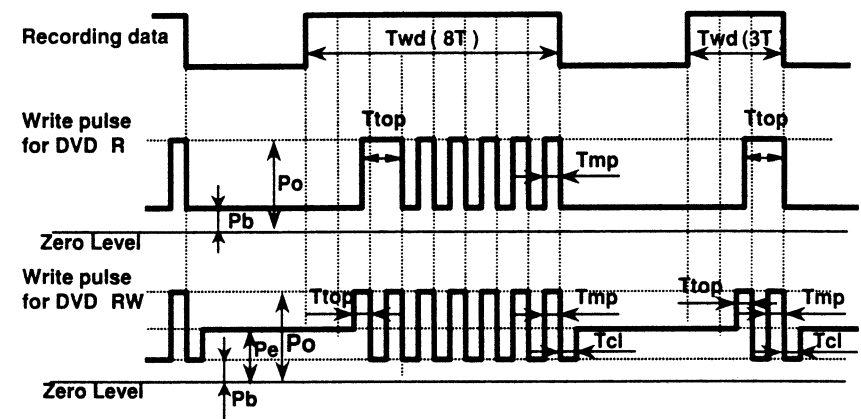


To make recordings, it is necessary to modulate the write pulse, which is called "Write Strategy".

There can be many types in Write Strategy. Typically Write Strategy for DVD  $\pm$ R has NMP(Non Multi-Pulse) type and MP(Multi-Pulse) type. In NMP type each single mark is created by subsequent separated short pulses. In MP type each single mark is created by one continuous pulse.

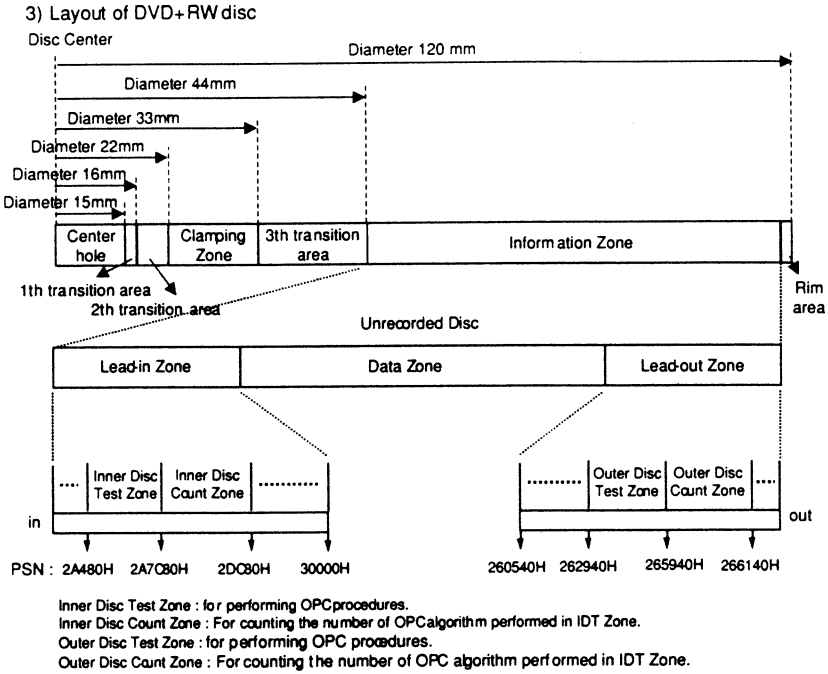
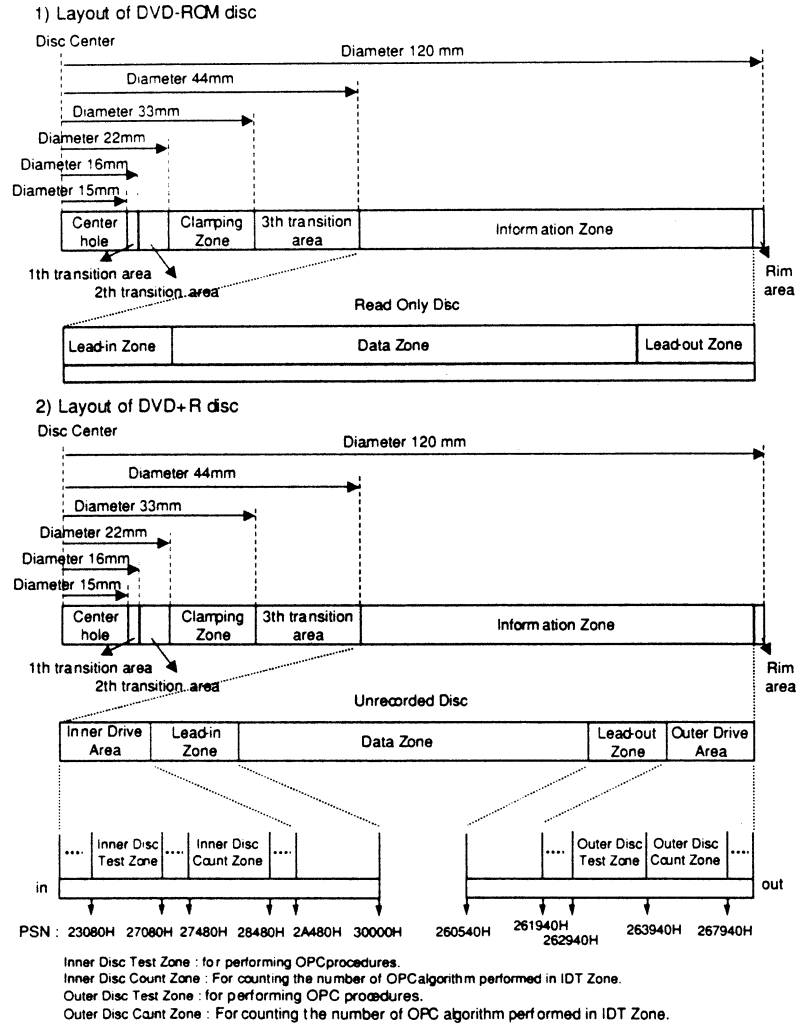
Write Strategy for DVD  $\pm$ RW has Type 1 and Type2. In Type 1 the mark with  $nT$  width is created by one top pulse and  $(n-2)$  multi-pulses. Thus mark 3T is made by one top pulse and one multi-pulse. In Type 2 the mark with  $nT$  width is created by one top pulse and  $(n-3)$  multi-pulses. Thus mark 3T is made by one top pulse only.

RL-02A uses MP type Write Strategy for DVD  $\pm$ R and Type 1 for DVD  $\pm$ RW as shown below.

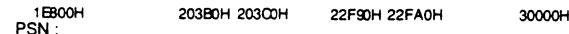


Po : Write Power (Peak Power)  
Pe : Erase Power  
Pb : Bias Power

#### 4. Organization of the Inner Drive Area, Outer Drive Area, Lead-in Zone and Lead-out Zone



## Disc Center



### 1) Block Diagram



ALPC function in CD-R/RW, DVD+R/RW analog front-end is for constant power level control purpose. Based on the accurate power sensor (FPD) in OPU, ALPC feedback loop maintains constant power level against laser diode's temperature variation.

There are two power control loops in uPC3330, which are used with different combination for different applications. Generally, the first ALPC loop is used for read-power control. The 2nd ALPC loop is used for write(erase) power control for CD-R/RW and DVD+R/RW disc.

Owing to the small signal level in read-power control mode, the first ALPC loop amplifies the FPD signal to enhance the accuracy of read power control. The built-in 10-bit DAC(VRDC\_DAC) is used to set the read power level. Moreover, the 2nd ALPC loop is used for high power control. The built-in 10-bit DAC(VWDC1\_DAC) is used to set the wanted power level.

And the register VWDC1G is employed to adjust the gain of FPD signal.

The following potentiometers(VRDC\_DAC, VWDC1\_DAC, and VWDC2\_DAC) and amplifiers (VRDCG and VWDC1G) are used to set the wanted levels of the output pins RL, WL, and PELD

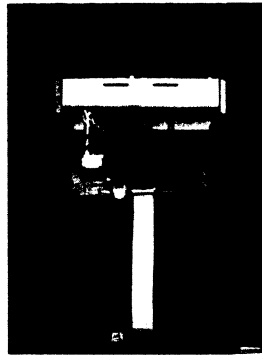
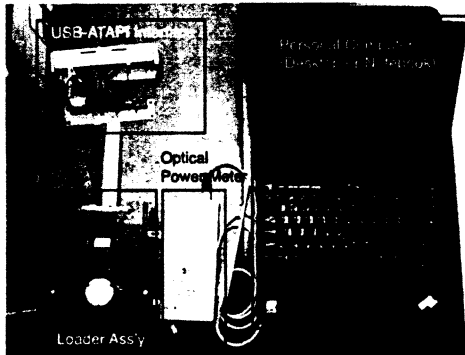


## How to use test tool

### 1. ALPC Measurement System Configuration

In order to measure and adjust DVD RW optical power, The following measurement equipments are needed.

- ◆ Compulsory equipment
  - ① Optical Power meter & Sensor (ADVANTEST, TQ8210/Q82017A or equivalent)
  - ② Personal Computer (Pentium 3, 500MHz Above, , RAM:64M Above, Win98 Above)
  - ③ Adjustment Program (Dragon or ALPC) for SVC, ALPC Program recommended
- ◆ FI optional equipment
  - ① USB-ATAPI Interface (needed when using USB Port from the laptop computer without ATAPI interface or a desktop computer)
  - ② Connector-ATAPI Interface Board(Part Mo:6881R-7677A) (needed when ATAPI is not attached to Loader)



Connector-ATAPI Interface Board

### 2. ALPC Program Configuration

ALPC Program consists of total 4 files.

ALPC.exe  
LgBada.dll  
modelnm.txt  
WNASPI32.DLL

These 4 files should be located in one directory.  
ALPC.exe is a program execution file.  
modelnm.txt is a configuration file.

#### Determine how to connect

The following contents are included when you open "modelnm.txt" file.

The following contents are included when you open LGE connect=0

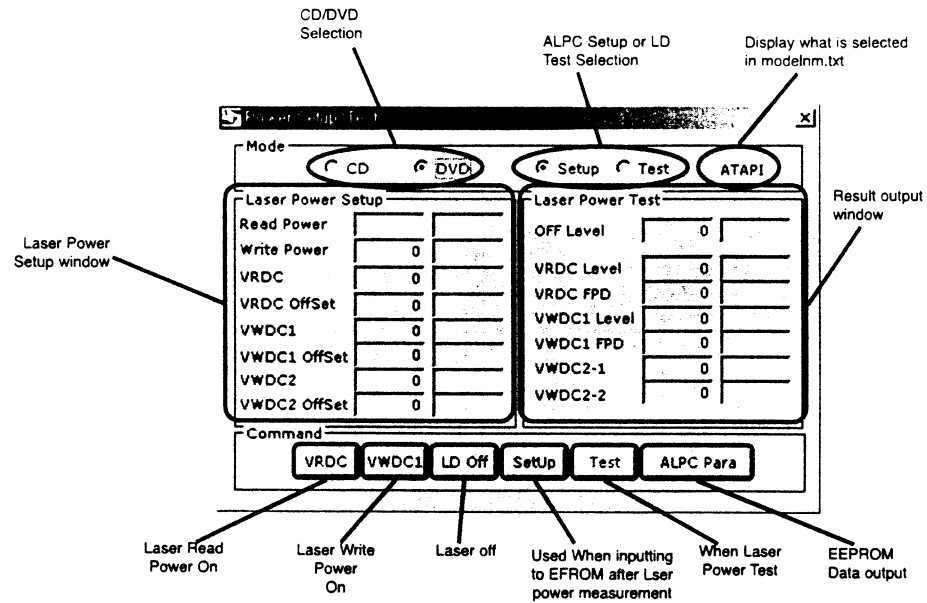
connect=0 is the item which you can determine whether you use Serial or ATAPI.

0 : ATAPI  
1 : Serial

Thus, select connect=0 to use ATAPI, or select connect=1 to use Serial, then save the file.  
(For SVC, ATAPI setting is recommended.)

### 3. Running ALPC Program

When running ALPC.exe file, the following screen appears.



### 4 LD Test

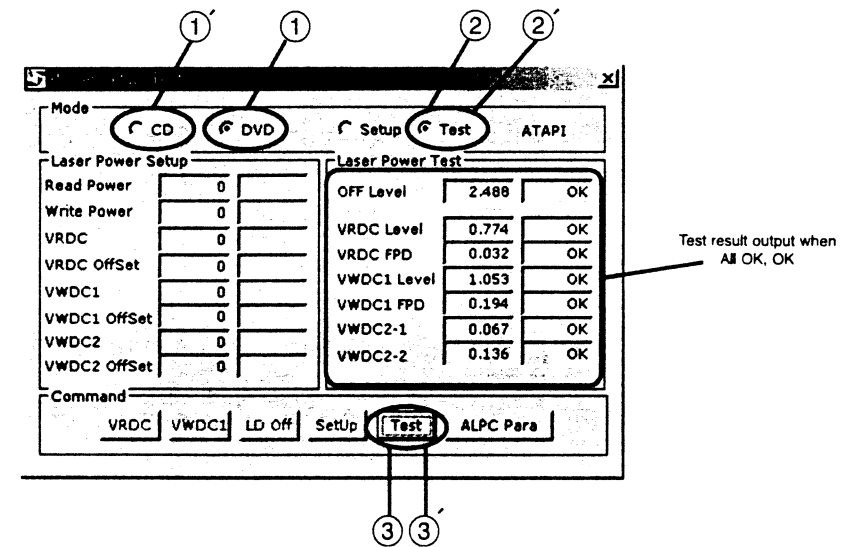
#### \* Test DVD LD

- ① Select DVD mode
- ② Select Test mode
- ③ Click Test

#### \* Test DVD CD

- ① Select CD mode
- ② Select Test mode
- ③ Click Test

Section	Off	VRDC	VR_FPD	VWDC1	VW_FPD	VW2-1	VW2-2
CD	2.4±0.08	0.53±0.22	0.02±0.01				
DVD	2.4±0.08	0.7±0.2	0.04±0.01	0.43±0.05	0.2±0.02	0.08±0.02	0.2±0.03



Specification can be changed according to pick-up type, circuit, program, and chipset.  
If specification is changed, program can be sent by supervisor.  
Specification above is temporary reference.

## 5. Optical Power Setting

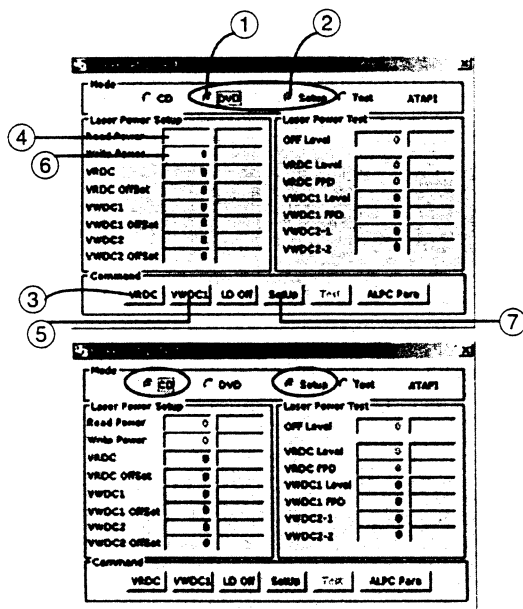
When replacing Travers ass'y including Pick-up or Loader PCB, Optical Power Setting should be performed for Pick-up and Loading PCB's matching.

### 1 DVD LD optical Power Setting

- Select DVD and Setup mode
- Push **[PWR]**. (Read Power On. Strong Red light can be seen from pick up optical lens.)
- Measure optical power.
- Write measurement value in Read Power.
- Push **[PWR]**. (Write power On.) (Caution) Light is very strong. Never look at the light directly.
- Measure optical power
- Write measurement value in Read Power and push LD off **[LD OFF]**.
- Push **[PWR]**. (Measurement value is inputted to EEPROM)

### 2 DVD LD optical Power Setting

- Select CD and Setup mode
- Push **[PWR]**. (Read Power On. Weak Red light can be seen from pick up optical lens.)
- Measure optical power.
- Write measurement value in Read Power.
- Push **[PWR]**. (Write power On. Weak Red light can be seen.)
- Measure optical power and push LD off **[LD OFF]**.
- Write measurement value in Read Power.
- Push **[PWR]**. (Measurement value is inputted to EEPROM)



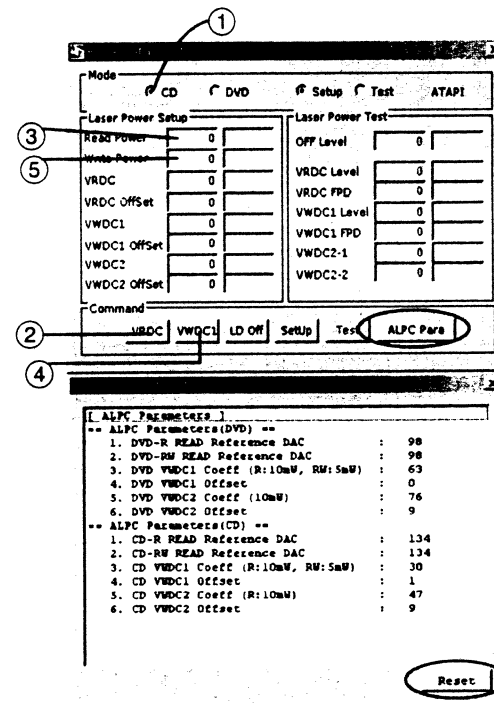
## 6. Optical Power Setting Parameter Check

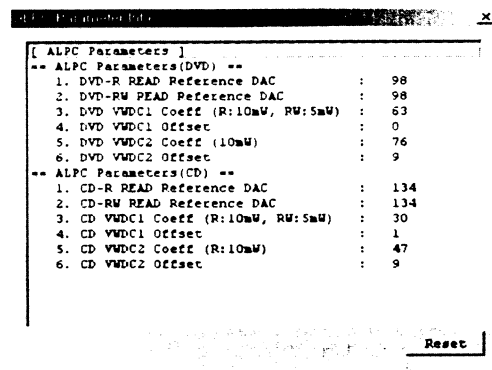
Use when defective happens even though LD test result is normal.

When defective can be found but power test result is OK. You need to check current settings whether they are proper or not. In this case, Pressing **[ALPC Para]** will display ALPC Parameter Info window and show current optical power settings recorded in EEPROM(IC302).

Write down these settings on the paper, perform optical power setting and press **[ALPC Para]** again, then new optical power settings will appear. Compare these two parameters. If there is a big difference, optical power setting may have been wrong at first or pick-up optical output may have been changed. If pick-up is normal, problem can be solved by resetting optical power without replacing pick-up.

In order to remove previous ALPC Parameter from ALPC Parameter Info, press **[Reset]** at the bottom of ALPC Parameter Info window.





[VALID ALPC Parameters]

<CD>

- |                             |            |
|-----------------------------|------------|
| 1) CD-R READ Reference DAC  | : 70 ~ 100 |
| 2) CD-RW READ Reference DAC | : 70 ~ 100 |

<DVD>

- |                              |            |
|------------------------------|------------|
| 1) DVD-R READ Reference DAC  | : 42 ~ 107 |
| 2) DVD-RW READ Reference DAC | : 42 ~ 107 |
| 3) VWDC1                     | : 35 ~ 65  |
| 4) VWDC1 Offset              | : 0 ~ 6    |
| 5) VWDC2                     | : 20 ~ 43  |
| 6) VWDC2 Offset              | : 0 ~ 10   |

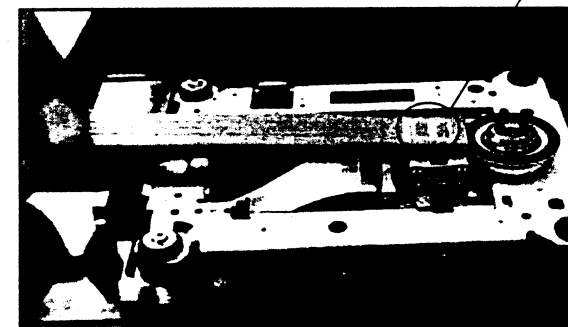
## Appendix. How to measure optical power

Optical power measurement is measuring actual optical power coming out from an object lens with LD turned on. thus, In order to measure optical power, LD should to be turned on and environment need to be dark enough. If necessary, Cover the top side of the sensor with black paper or hand when measuring. Generally, fluorescent light is about 50  $\mu$ W, sun light is about 100 mW. so, If this is ignored, optical power setting may not be set correctly.

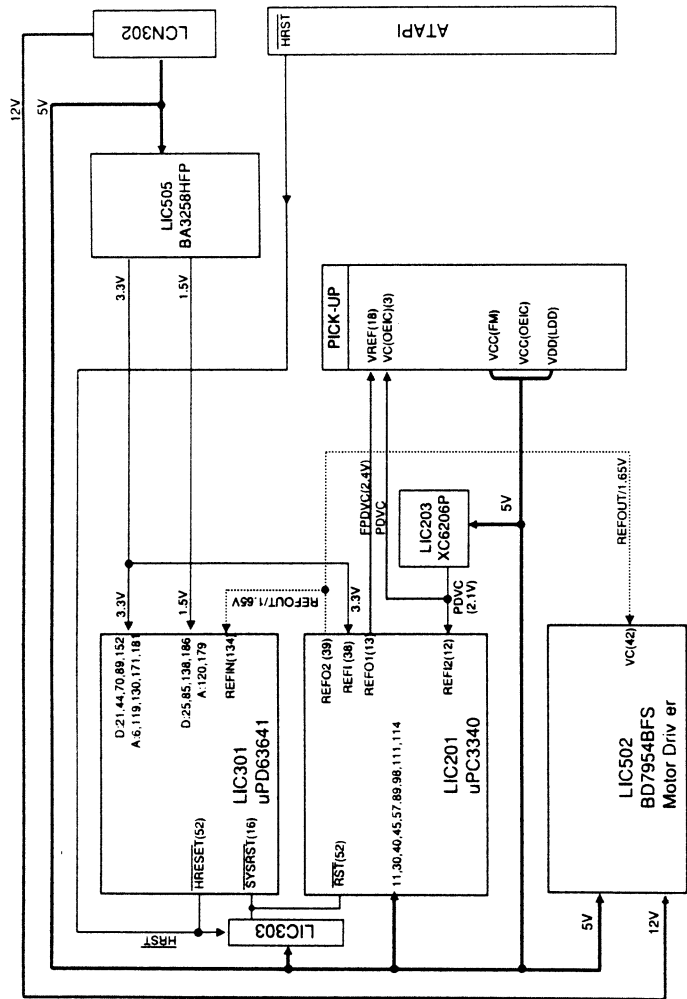
Optical power measurement procedure

1. Adjust optical power meter's  $\lambda$ (wave length) to DVD. (Generally 660 nm)
2. Turn DVD LD on.
3. Place sensor less than 3mm apart from pick-up object lens, perpendicular to lens.  
Adjust position so that the center of object lens match to mark on the sensor.
4. Read monitor's value. (Read Maximum value as moving position slightly)  
(Check working unit. Unit should be mW. When LD is dead,  $\mu$ W or nW unit may not be read correctly.)
5. Multiply monitor's value by 100, round off to the nearest integer, then write constant part.
6. Adjust optical power meter's  $\lambda$  (wave length) to CD. (Generally 780 nm)
7. Turn CD LD on.
8. Repeat step 3~5 above.

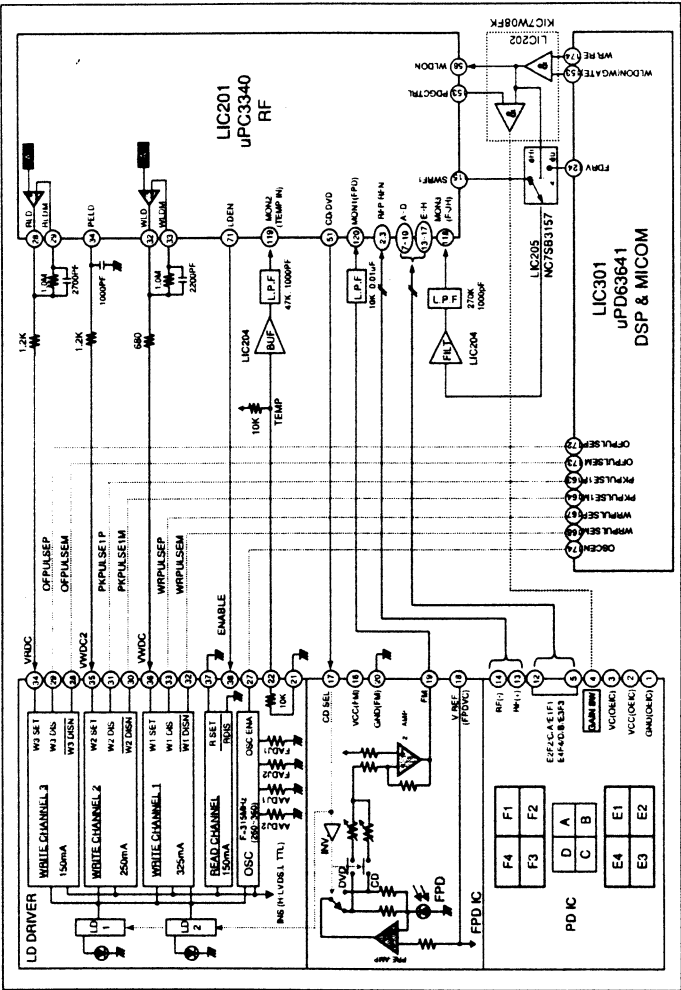
Display Part



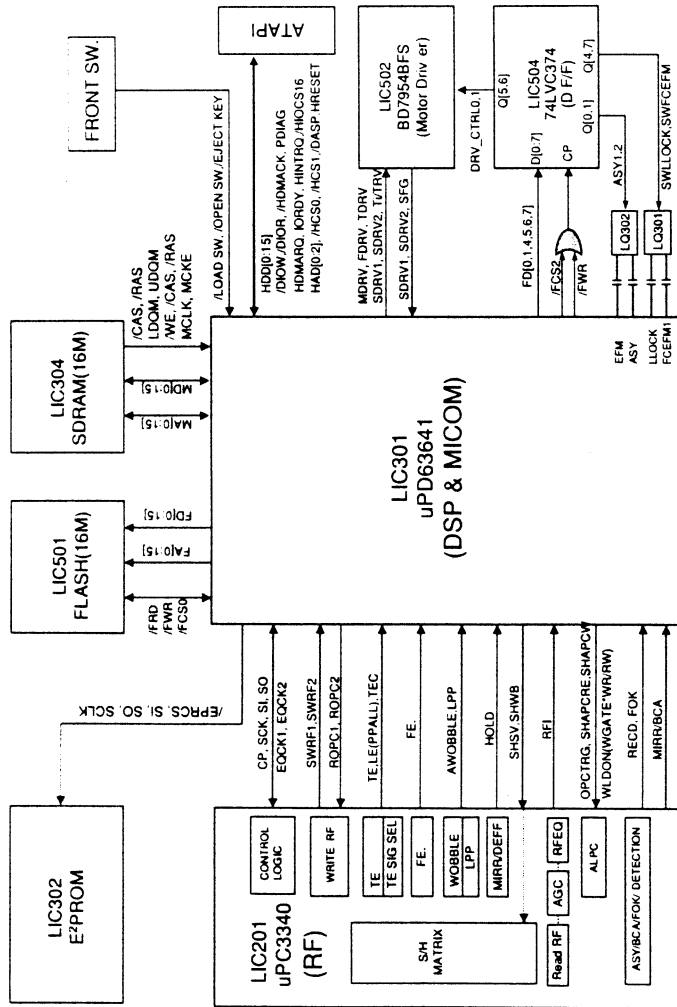
BLOCK DIAGRAMS  
1. OVERALL BLOCK DIAGRAM



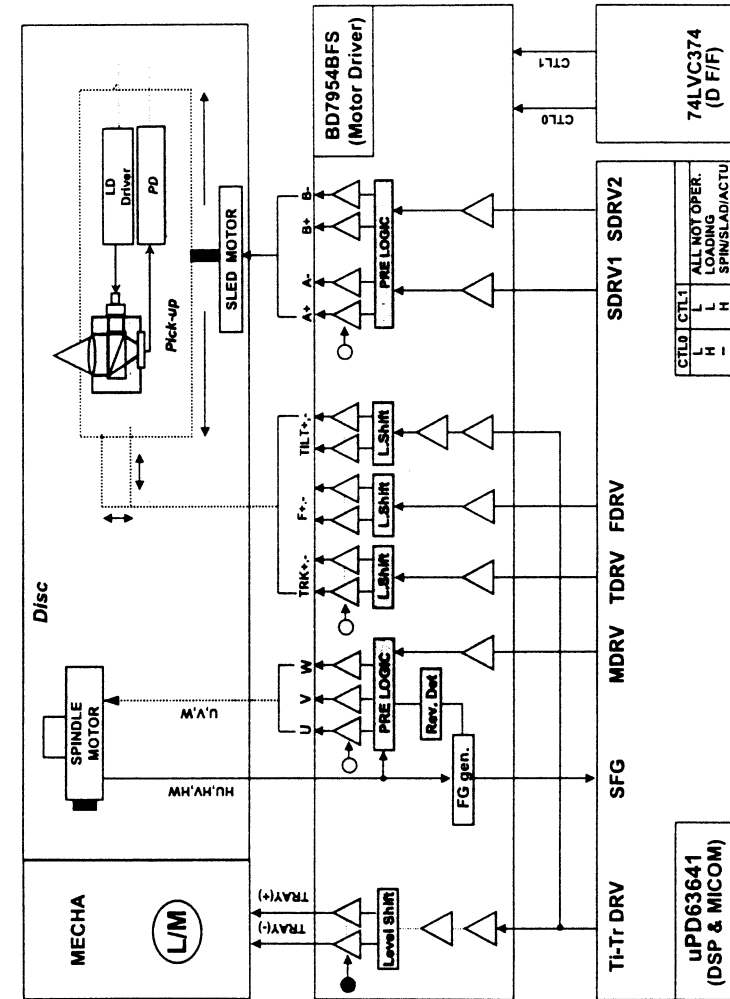
2. DSP BLOCK DIAGRAM



### 3. $\mu$ -COM BLOCK DIAGRAM



#### 4. RF BLOCK DIAGRAM



A vertical axis with tick marks and labels from 1 to 12. The labels are positioned to the left of the axis line.







[illegible]

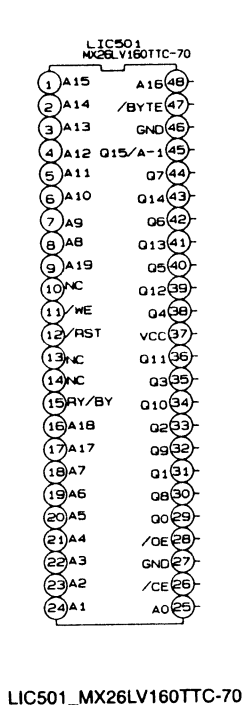
CIRCUIT VOLTAGE CHART

MODE PIN NO.	STATE	MODE PIN NO.	STATE	MODE PIN NO.	STATE	MODE PIN NO.	STATE	MODE PIN NO.	STATE	MODE PIN NO.	STATE	MODE PIN NO.	STATE	MODE PIN NO.	STATE	MODE PIN NO.	STATE	MODE PIN NO.	STATE	MODE PIN NO.	STATE	MODE PIN NO.	STATE	MODE PIN NO.	STATE
LIC201		55	0	110	3.93	15	0	70	3.34	125	1.68	180	0	4	0	8	0	14	0	141.27					
1	0	56	3.34	111	5.07	16	3.34	71	0	126	1.67	181	3.34	5	0	9	0	15	0	15	0				
2	2.35	57	5.08	112	2.9	17	5.19	72	0	127	1.67	182	0	6	0	10	0	16	0	16	0				
3	2.35	58	0	113	1.64	18	3.42	73	3.34	128	0	183	3.34	7	3.34	11	3.34	17	12.92	17	1.46				
4	2.36	59	0	114	5.07	19	3.43	74	3.34	129	1.7	184	3.34	8	0	12	3.34	18	12.92	18	0				
5	2.36	60	3.34	115	0	20	0	75	3.34	130	3.34	185	0	9	0	13	0	19	5.1	19	3.35				
6	0	61	3.34	116	0	21	3.34	76	1.02	131	1.7	186	1.5	10	0	14	0	20	5.1	20	3.35				
7	2.14	62	3.34	117	0	22	0	77	3.33	132	1.47	187	0	11	0	15	0	21	5.1			LIC505			
8	2.14	63	0	118	1.65	23	0	78	3.34	133	1.83	188	0	12	0	16	0	22	5.1	1	5.1				
9	2.14	64	0	119	1.3	24	5.04	79	3.34	134	1.68	189	0	13	3.34	17	0	23	5.1	2	1.52				
10	2.14	65	0	120	2.38	25	1.51	80	0	135	1.62	190	0	14	3.34	18	0	24	5.1	3	0				
11	5.07	66	0	LIC202		26	0	81	0	136	0	191	0	15	3.34	19	0	25	5.1	4	1.52				
12	2.13	67	1.67	1	3.33	27	5.08	82	3.34	137	2.9	192	0	16	3.34	20	0	26	1.67	5	3.34				
13	2.38	68	1.63	2	0	28	0	83	0	138	1.51	193	0	17	3.34	21	0	27	0			LIC506			
14	2.14	69	0	3	0	29	3.43	84	0	139	0	194	0	18	0	22	0	28	5.1	1	3.34				
15	2.14	70	0	4	0	30	5.07	85	1.51	140	0	195	0	19	0	23	0	29	1.67	2	3.34				
16	2.14	71	0	5	0	31	3.43	86	0	141	0	196	0	20	3.34	24	0	30	2.06	3	0				
17	2.14	72	0	6	0	32	3.43	87	0	142	0	197	0	21	0	25	0	31	12.92	4	3.35				
18	0	73	0	7	0	33	3.35	88	0	143	0	198	0	22	0	26	3.34	32	12.92	5	3.35				
19	2.39	74	0	8	3.34	34	3.32	89	3.34	144	0	199	0	23	0	27	0	33	12.92						
20	0.11	75	3.33	LIC203		35	3.32	90	0	145	0	200	0	24	0	28	3.34	34	0						
21	2.38	76	3.33	1	0	36	3.32	91	0	146	0	201	0	25	3.34	29	0	35	0						
22	0.11	77	0	2	2.13	37	3.33	92	0	147	0	202	0	26	0	30	0	36	0						
23	0	78	3.33	3	5.08	38	3.31	93	0	148	3.34	203	3.34	27	0	31	3.33	37	0						
24	2.38	79	1.82	LIC204		39	3.32	94	0	149	3.34	204	0	28	0	32	0	38	0						
25	2.38	80	2.37	1	1.7	40	3.32	95	0	150	3.34	205	0	29	0	33	0	39	0						
26	1.71	81	1.89	2	1.69	41	3.32	96	3.34	151	0	206	0	30	0	34	0	40	0						
27	0	82	0	3	1.55	42	0	97	0	152	3.32	207	0	31	0	35	3.33	41	0						
28	0	83	2.36	4	0	43	3.32	98	0	153	0	208	0	32	0	36	0	42	1.68						
29	0	84	1.66	5	0	44	3.34	99	0	154	0	209	0	33	0	37	0	43	3.34						
30	5.06	85	1.68	6	1.35	45	3.32	100	3.32	155	3.34	210	3.33	34	3.34	38	0	44	0						
31	0	86	1.61	7	1.35	46	3.32	101	3.32	156	0	211	0	35	1.02	39	0	45	0						
32	0	87	1.69	8	5.08	47	3.32	102	3.32	157	3.34	212	0	36	3.4	40	0	46	1.7						
33	0	88	2.8	LIC205		48	3.32	103	0	158	3.34	213	0	37	0	41	0	47	1.66						
34	0	89	5.07	1	1.97	49	3.32	104	1.64	159	0	214	3.33	38	0	42	0	48	5.1						
35	0	90	0	2	0	50	3.32	105	0	160	3.34	215	0	39	0	43	0	49	0						
36	2.52	91	3.17	3	1.68	51	0	106	3.33	161	3.34	216	3.33	40	0	44	0	50	0						
37	2	92	3.17	4	1.68	52	3.85	107	3.34	162	1.64	LIC302		41	0	45	0	51	0						
38	3.34	93	1.29	5	5.07	53	0	108	0	163	1.4	1	0	42	0	46	0	52	0						
39	1.68	94	1.87	6	0	54	3.31	109	1.67	164	1.21	2	3.34	43	0	47	0	53	0						
40	5.07	95	1.75	LIC301		55	0	110	1.67	165	0	3	0	44	3.34	48	0	54	0						
41	1.57	96	1.81	1	1.61	56	0	111	1.66	166	1.31	4	3.34	45	0	49	0								
42	1.61	97	1.83	2	1.45	57	0	112	0.72	167	2.79	5	0	46	0	50	0								
43	0	98	5.07	3	1.42	58	0	113	0	168	1.31	6	0	47	0	51	0								
44	1.26	99	0	4	0	59	0	114	0	169	0	7	0	48	0	52	0								
45	5.07	100	0	5	0	60	0	115	1.66	170	0	8	0	49	0	53	0								
46	2.36	101	0	6	3.34	61	0	116	1.66	171	3.34	LIC303		50	0	54	0								
47	2.36	102	0	7	3.34	62	0	117	1.84	172	3.32	1	0	51	0	55	0								
48	2.41	103	1.14	8	0	63	0	118	3.34	173	1.28	2	3.34	52	0	56	0								
49	2.43	104	1.81	9	0	64	0	119	3.29	174	3.24	3	3.85	53	0	57	0								
50	0	105	0	10	0	65	0	120	1.51	175	0	4	5.11	54	0	58	0								
51	0	106	3.93	11	0	66	0	121	1.01	176	0	LIC304		55	0	59	0								
52	3.34	107	3.93	12	0	67	0	122	2.29	177	0	1	3.34	56	0	60	0								
53	3.34	108	3.93	13	0	68	0	123	1.67	178	0	2	0	57	0	61	0								
54	3.34	109	3.93	14	0	69	0	124	1.68	179	1.51	3	0	58	0	62	0								

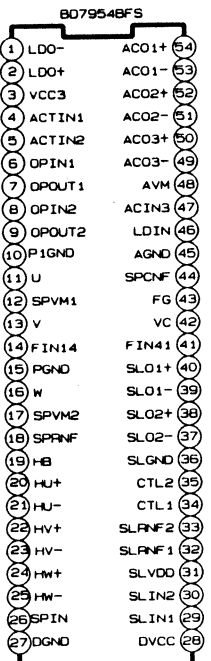
5-61

5-62

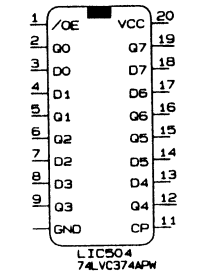
IC BLOCK DIAGRAMS



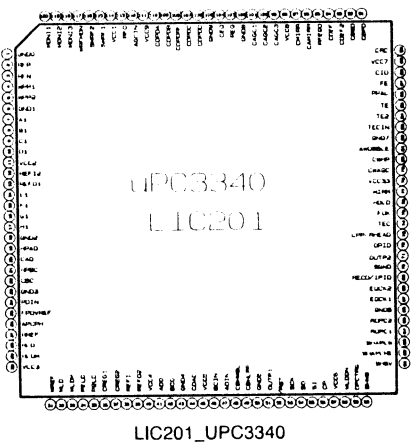
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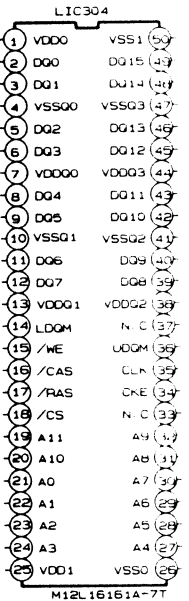
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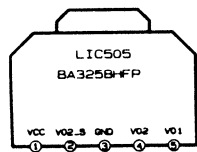
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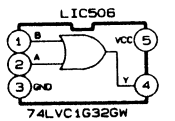
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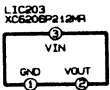
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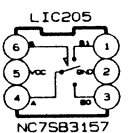
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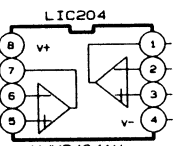
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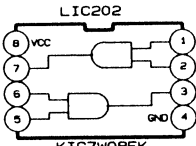
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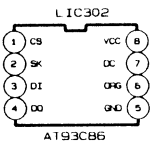
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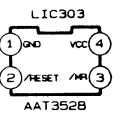
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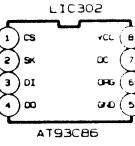
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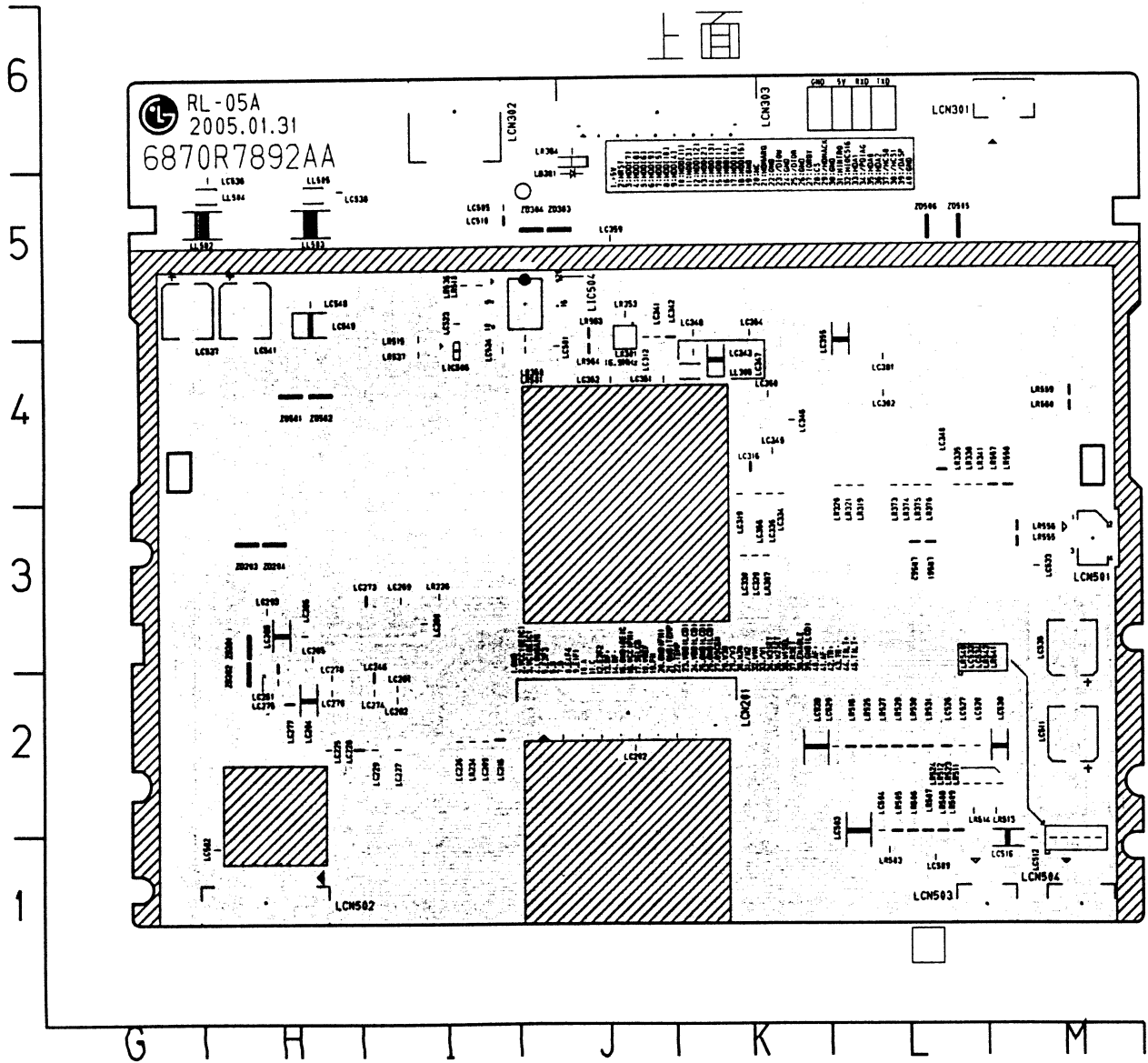


LIC303\_AAT3528



LIC302\_AT93C86

PRINTED CIRCUIT DIAGRAMS  
1. MAIN P.C.BOARD



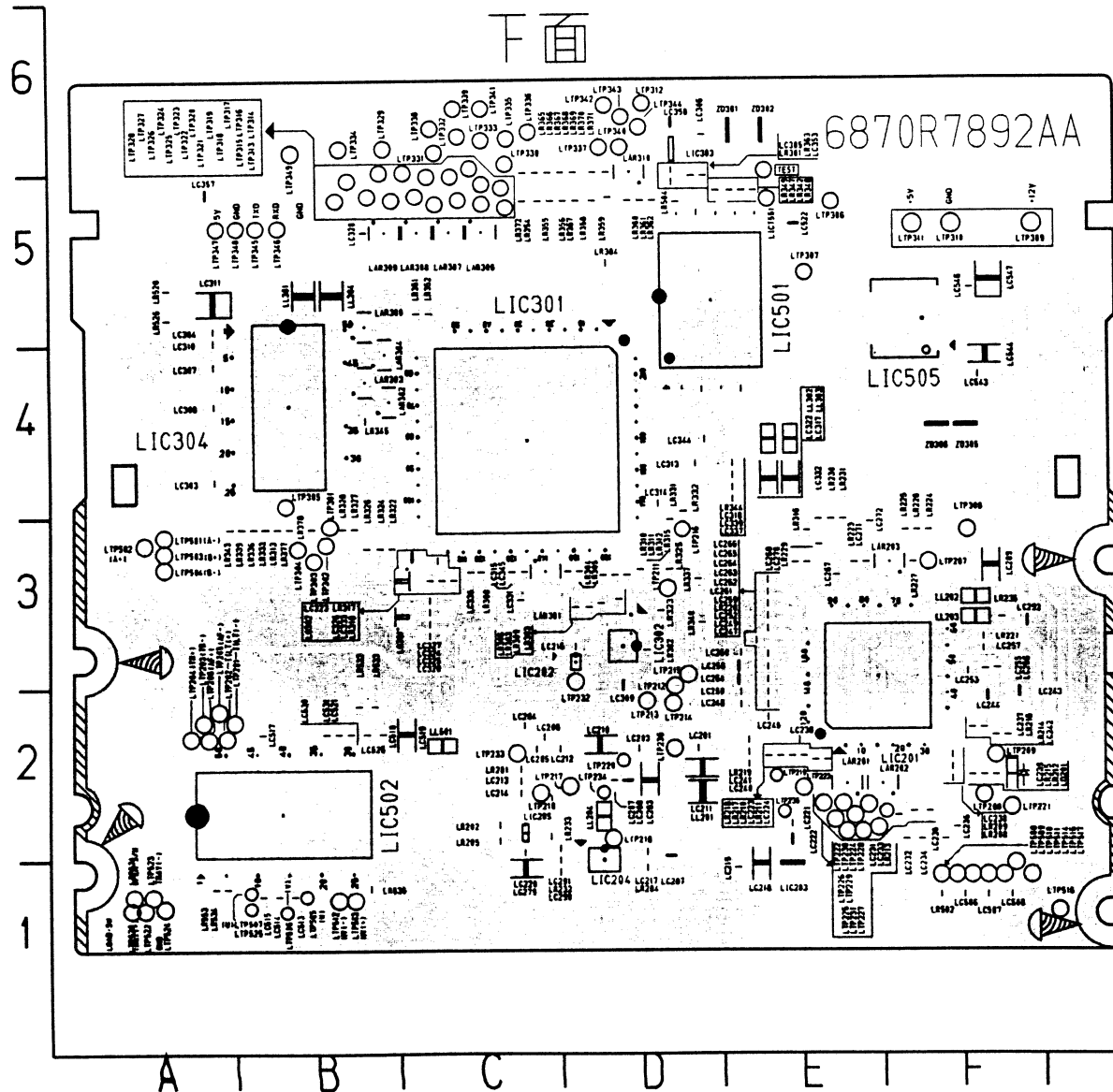
# LOCATION GUIDE

LC202 J2	LC343 K4	LC541 H5	LC1318L4	LC1559L2	LR513 M2
LC209 J2	LC346 K4	LC548 H5	LC1319L4	LC1561L2	LR514 L3
LC215 J2	LC347 K4	LC549 H5	LC1321L4	LC1563L2	LR515 L4
LC225 H2	LC348 K5	LCN201 J2	LC1324L4	LC1566L4	LR516 L2
LC226 J2	LC349 K4	LCN301 M6	LC1325L4	LC1567L4	LR523 M2
LC227 J2	LC350 K4	LCN302 J6	LC1328L4	LC1568J5	LR524 L2
LC228 H2	LC351 J4	LCN303 J6	LC1329L4	LL305 K4	LR525 L2
LC229 J2	LC352 J4	LCN501 M3	LC1330K4	LL502 H5	LR527 L2
LC246 J2	LC354 K5	LCN502 H1	LC1331K4	LL503 H5	LR529 L2
LC251 H3	LC355 L4	LCN503 L1	LC1332L4	LL504 H5	LR530 L2
LC269 J3	LC356 K4	LCN504 M1	LC1333L4	LL505 H5	LR531 L2
LC273 J3	LC359 J5	LD301 J6	LC1335K4	LR226 J3	LR536 J5
LC274 J2	LC501 J4	LC13504 J5	LC1336L4	LR234 J2	LR537 J4
LC275 H2	LC502 H1	LC13506 J4	LC1337K1	LR307 K3	LR540 M1
LC276 H2	LC503 L2	LC1220J3	LC1339K2	LR319 L4	LR541 M1
LC277 H2	LC504 L2	LC1220J3	LC1339K2	LR319 L4	LR541 M1
LC278 H2	LC505 J5	LC1221J2	LC1334K3	LR321 L4	LR555 M3
LC280 J3	LC509 J1	LC1223H3	LC1336K4	LR335 L4	LR556 M3
LC281 J2	LC510 J5	LC1224J3	LC1336K4	LR338 L4	LR557 M4
LC282 J2	LC511 M2	LC1225J3	LC1336K4	LR341 L4	LR558 M4
LC284 H2	LC512 M1	LC1227H3	LC1337J4	LR350 J4	LR559 M4
LC285 H3	LC516 M1	LC1301L4	LC1337J4	LR353 J5	LR560 M4
LC286 H3	LC520 L2	LC1302L5	LC1337J4	LR364 J6	LR561 L3
LC288 H3	LC523 J5	LC1303L5	LC1338J5	LR373 L4	LR562 L3
LC293 H3	LC524 J4	LC1304L4	LC1501J4	LR374 L4	LR563 J5
LC301 L4	LC526 L2	LC1305L4	LC1502J4	LR375 L4	LR564 J4
LC302 L4	LC527 L2	LC1306L4	LC1505L1	LR376 L4	LR301 J4
LC312 J4	LC528 K2	LC1307L4	LC1516L2	LR501 J4	ZD201 H3
LC316 K4	LC529 L2	LC1308L4	LC1517L2	LR503 L1	ZD202 H2
LC319 K4	LC532 M1	LC1309L4	LC1526J4	LR505 L2	ZD203 H3
LC329 K3	LC533 M3	LC1310L4	LC1539J5	LR506 L2	ZD204 H3
LC330 K3	LC534 M1	LC1311K4	LC1541J5	LR507 L2	ZD303 J5
LC334 K4	LC535 M3	LC1312L4	LC1543J5	LR508 L2	ZD304 J5
LC335 K4	LC536 H5	LC1313L4	LC1545J5	LR509 L2	ZD501 H4
LC340 L4	LC537 G5	LC1314L4	LC1554J5	LR510 J5	ZD502 H4
LC341 J4	LC538 H5	LC1315L4	LC1555J5	LR511 M2	ZD505 L5
LC342 J4	LC539 M2	LC1316L4	LC1558M2	LR512 L2	ZD506 L5

# LOCATION GUIDE

FE	LC235 F2	LC292 F3	LC518 B2	LC1220E2	LC1220J3	LC131704	LC154405	LR220 E3	LR339 B3	LR553 A1	LR305 B4	LR346 B5
FE	LC236 F2	LC303 A4	LC519 C2	LC1221F2	LC1221F3	LC131804	LC154605	LR221 E3	LR340 D3	LR554 A2	LR306 E5	LR347 A5
LAR201 F3	LC237 F2	LC304 A5	LC520 B2	LC1222F2	LC1222F3	LC131904	LC154805	LR222 E3	LR341 D3	LR555 A2	LR307 E5	LR348 B5
LAR202 F3	LC238 E3	LC305 D6	LC521 E5	LC1223F2	LC1223F3	LC132004	LC155005	LR223 E3	LR342 A3	LR556 A2	LR308 F3	LR349 B6
LAR203 F3	LC239 F3	LC306 D6	LC522 E5	LC1224C3	LC1224C3	LC132104	LC155205	LR224 E3	LR343 A3	LR557 A2	LR309 F3	LR350 B6
LAR204 F3	LC240 E3	LC307 A4	LC523 B2	LC1225F2	LC1225F3	LC132204	LC155405	LR225 E3	LR344 E4	LR558 A2	LR310 F5	LR351 A3
LAR301 B4	LC241 E3	LC308 A4	LC524 B2	LC1226C2	LC1226C3	LC132304	LC155605	LR226 E3	LR345 B4	LR559 A2	LR311 F5	LR352 A3
LAR302 B4	LC242 F2	LC309 D3	LC525 F4	LC1227F2	LC1227F3	LC132404	LC155805	LR227 E3	LR346 E5	LR560 A2	LR312 F5	LR353 A3
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LAR304 A4	LC244 F2	LC311 A5	LC527 F5	LC1229F2	LC1229F3	LC132604	LC156205	LR229 E3	LR348 E5	LR562 A2	LR314 F5	LR355 A3
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LAR306 A4	LC246 E2	LC313 D4	LC529 F5	LC1231F2	LC1231F3	LC132804	LC156605	LR231 E3	LR350 E5	LR564 A2	LR316 F5	LR357 A3
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LAR313 B5	LC253 E2	LC320 E5	LC536 E3	LC1238F2	LC1238F3	LC133504	LC158005	LR238 E3	LR357 E5	LR571 A2	LR323 F5	LR364 A3
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LAR315 B5	LC255 E2	LC322 E5	LC538 E3	LC1240F2	LC1240F3	LC133704	LC158405	LR240 E3	LR359 E5	LR573 A2	LR325 F5	LR366 A3
LAR316 B5	LC256 E2	LC323 E5	LC539 E3	LC1241F2	LC1241F3	LC133804	LC158605	LR241 E3	LR360 E5	LR574 A2	LR326 F5	LR367 A3
LAR317 B5	LC257 E2	LC324 E3	LC540 E3	LC1242F2	LC1242F3	LC133904	LC158805	LR242 E3	LR361 E5	LR575 A2	LR327 F5	LR368 A3
LAR318 B5	LC258 E2	LC325 E3	LC541 E3	LC1243F2	LC1243F3	LC134004	LC159005	LR243 E3	LR362 E5	LR576 A2	LR328 F5	LR369 A3
LAR319 B5	LC259 E2	LC326 E3	LC542 E3	LC1244F2	LC1244F3	LC134104	LC159205	LR244 E3	LR363 E5	LR577 A2	LR329 F5	LR370 A3
LAR320 B5	LC260 E2	LC327 E3	LC543 E3	LC1245F2	LC1245F3	LC134204	LC159405	LR245 E3	LR364 E5	LR578 A2	LR330 F5	LR371 A3
LAR321 B5	LC261 E2	LC328 E3	LC544 E3	LC1246F2	LC1246F3	LC134304	LC159605	LR246 E3	LR365 E5	LR579 A2	LR331 F5	LR372 A3
LAR322 B5	LC262 E2	LC329 E3	LC545 E3	LC1247F2	LC1247F3	LC134404	LC159805	LR247 E3	LR366 E5	LR580 A2	LR332 F5	LR373 A3
LAR323 B5	LC263 E2	LC330 E3	LC546 E3	LC1248F2	LC1248F3	LC134504	LC160005	LR248 E3	LR367 E5	LR581 A2	LR333 F5	LR374 A3
LAR324 B5	LC264 E2	LC331 E3	LC547 E3	LC1249F2	LC1249F3	LC134604	LC160205	LR249 E3	LR368 E5	LR582 A2	LR334 F5	LR375 A3
LAR325 B5	LC265 E2	LC332 E3	LC548 E3	LC1250F2	LC1250F3	LC134704	LC160405	LR250 E3	LR369 E5	LR583 A2	LR335 F5	LR376 A3
LAR326 B5	LC266 E2	LC333 E3	LC549 E3	LC1251F2	LC1251F3	LC134804	LC160605	LR251 E3	LR370 E5	LR584 A2	LR336 F5	LR377 A3
LAR327 B5	LC267 E2	LC334 E3	LC550 E3	LC1252F2	LC1252F3	LC134904	LC160805	LR252 E3	LR371 E5	LR585 A2	LR337 F5	LR378 A3
LAR328 B5	LC268 E2	LC335 E3	LC551 E3	LC1253F2	LC1253F3	LC135004	LC161005	LR253 E3	LR372 E5	LR586 A2	LR338 F5	LR379 A3
LAR329 B5	LC269 E2	LC336 E3	LC552 E3	LC1254F2	LC1254F3	LC135104	LC161205	LR254 E3	LR373 E5	LR587 A2	LR339 F5	LR380 A3
LAR330 B5	LC270 E2	LC337 E3	LC553 E3	LC1255F2	LC1255F3	LC135204	LC161405	LR255 E3	LR374 E5	LR588 A2	LR340 F5	LR381 A3
LAR331 B5	LC271 E2	LC338 E3	LC554 E3	LC1256F2	LC1256F3	LC135304	LC161605	LR256 E3	LR375 E5	LR589 A2	LR341 F5	LR382 A3
LAR332 B5	LC272 E2	LC339 E3	LC555 E3	LC1257F2	LC1257F3	LC135404	LC161805	LR257 E3	LR376 E5	LR590 A2	LR342 F5	LR383 A3
LAR333 B5	LC273 E2	LC340 E3	LC556 E3	LC1258F2	LC1258F3	LC135504	LC162005	LR258 E3	LR377 E5	LR591 A2	LR343 F5	LR384 A3
LAR334 B5	LC274 E2	LC341 E3	LC557 E3	LC1259F2	LC1259F3	LC135604	LC162205	LR259 E3	LR378 E5	LR592 A2	LR344 F5	LR385 A3
LAR335 B5	LC275 E2	LC342 E3	LC558 E3	LC1260F2	LC1260F3	LC135704	LC162405	LR260 E3	LR379 E5	LR593 A2	LR345 F5	LR386 A3
LAR336 B5	LC276 E2	LC343 E3	LC559 E3	LC1261F2	LC1261F3	LC135804	LC162605	LR261 E3	LR380 E5	LR594 A2	LR346 F5	LR387 A3
LAR337 B5	LC277 E2	LC344 E3	LC560 E3	LC1262F2	LC1262F3	LC135904	LC162805	LR262 E3	LR381 E5	LR595 A2	LR347 F5	LR388 A3
LAR338 B5	LC278 E2	LC345 E3	LC561 E3	LC1263F2	LC1263F3	LC136004	LC163005	LR263 E3	LR382 E5	LR596 A2	LR348 F5	LR389 A3
LAR339 B5	LC279 E2	LC346 E3	LC562 E3	LC1264F2	LC1264F3	LC136104	LC163205	LR264 E3	LR383 E5	LR597 A2	LR349 F5	LR390 A3
LAR340 B5	LC280 E2	LC347 E3	LC563 E3	LC1265F2	LC1265F3	LC136204	LC163405	LR265 E3	LR384 E5	LR598 A2	LR350 F5	LR391 A3
LAR341 B5	LC281 E2	LC348 E3	LC564 E3	LC1266F2	LC1266F3	LC136304	LC163605	LR266 E3	LR385 E5	LR599 A2	LR351 F5	LR392 A3
LAR342 B5	LC282 E2	LC349 E3	LC565 E3	LC1267F2	LC1267F3	LC136404	LC163805	LR267 E3	LR386 E5	LR600 A2	LR352 F5	LR393 A3
LAR343 B5	LC283 E2	LC350 E3	LC566 E3	LC1268F2	LC1268F3	LC136504	LC164005	LR268 E3	LR387 E5	LR601 A2	LR353 F5	LR394 A3
LAR344 B5	LC284 E2	LC351 E3	LC567 E3	LC1269F2	LC1269F3	LC136604	LC164205	LR269 E3	LR388 E5	LR602 A2	LR354 F5	LR395 A3
LAR345 B5	LC285 E2	LC352 E3	LC568 E3	LC1270F2	LC1270F3	LC136704	LC164405	LR270 E3	LR389 E5	LR603 A2	LR355 F5	LR396 A3
LAR346 B5	LC286 E2	LC353 E3	LC569 E3	LC1271F2	LC1271F3	LC136804	LC164605	LR271 E3	LR390 E5	LR604 A2	LR356 F5	LR397 A3
LAR347 B5	LC287 E2	LC354 E3	LC570 E3	LC1272F2	LC1272F3	LC136904	LC164805	LR272 E3	LR391 E5	LR605 A2	LR357 F5	LR398 A3
LAR348 B5	LC288 E2	LC355 E3	LC571 E3	LC1273F2	LC1273F3	LC137004	LC165005	LR273 E3	LR392 E5	LR606 A2	LR358 F5	LR399 A3
LAR349 B5	LC289 F3	LC356 E3	LC572 E3	LC1274F2	LC1274F3	LC137104	LC165205	LR274 E3	LR393 E5	LR607 A2	LR359 F5	LR400 A3
LAR350 B5	LC290 E2	LC357 E3	LC573 E3	LC1275F2	LC1275F3	LC137204	LC165405	LR275 E3	LR394 E5	LR608 A2	LR360 F5	LR401 A3
LAR351 B5	LC291 E2	LC358 E3	LC574 E3	LC1276F2	LC1276F3	LC137304	LC165605	LR276 E3	LR395 E5	LR609 A2	LR361 F5	LR402 A3
LAR352 B5	LC292 E2	LC359 E3	LC575 E3	LC1277F2	LC1277F3	LC137404	LC165805	LR277 E3	LR396 E5	LR610 A2	LR362 F5	LR403 A3
LAR353 B5	LC293 E2	LC360 E3	LC576 E3	LC1278F2	LC1278F3	LC137504	LC166005	LR278 E3	LR397 E5	LR611 A2	LR363 F5	LR404 A3
LAR354 B5	LC294 E2	LC361 E3	LC577 E3	LC1279F2	LC1279F3	LC137604	LC166205	LR279 E3	LR398 E5	LR612 A2	LR364 F5	LR405 A3
LAR355 B5	LC295 E2	LC362 E3	LC578 E3	LC1280F2	LC1280F3	LC137704	LC166405	LR280 E3	LR399 E5	LR613 A2	LR365 F5	LR406 A3
LAR356 B5	LC296 E2	LC363 E3	LC579 E3	LC1281F2	LC1281F3	LC137804	LC166605	LR281 E3	LR400 E5	LR614 A2	LR366 F5	LR407 A3
LAR357 B5	LC297 E2	LC364 E3	LC580 E3	LC1282F2	LC1282F3	LC137904	LC166805	LR282 E3	LR401 E5	LR615 A2	LR367 F5	LR408 A3
LAR358 B5	LC298 E2	LC365 E3	LC581 E3	LC1283F2	LC1283F3	LC138004	LC167005	LR283 E3	LR402 E5	LR616 A2	LR368 F5	LR409 A3
LAR359 B5	LC299 E2	LC366 E3	LC582 E3	LC1284F2	LC1284F3	LC138104	LC167205	LR284 E3	LR403 E5	LR617 A2	LR369 F5	LR410 A3
LAR360 B5	LC300 E2	LC367 E3	LC583 E3	LC1285F2	LC1285F3	LC138204	LC167405	LR285 E3	LR404 E5	LR618 A2	LR370 F5	LR411 A3

## 2. MAIN P.C.BOARD



## MECHANICAL &amp; ACCESSORIES PARTS LIST

## SET &amp; PACKAGING PARTS (FOR PAGES 2-2 TO 2-3)

261	9965 000 25780	RUBBER FOOT	26	9965 000 25640	MOTOR ASSEMBLY, L/D - (DI) D37	
264	9965 000 25779	FAN, DC 60X60X15MM	26 *	9965 000 28836	MOTOR ASSEMBLY	
265	9965 000 25546	HOLDER, POWER CORD	27	9965 000 25641	GEAR, WHEEL OTHER - D37	
266	9965 000 28797	BRACKET, MOUNTING	28	9965 000 25642	REEL, T OTHER - D37	
274	9965 000 26264	PLATE, AV GND	29	9965 000 25643	ARM ASSEMBLY, PINCH - D37 (CHON	
283	9965 000 25773	VCR DOOR	29 *	9965 000 28837	ARM ASSEMBLY	
284	4822 492 42785	SPRING DOOR	29 *	9965 000 28838	ARM ASSEMBLY	
285	9965 000 25774	DVD DOOR	31	9965 000 25644	SPRING, COIL TENSION - D37	
286	9965 000 25776	SPRING, DVD DOOR	51	9965 000 19315	CAPSTAN	
300	9965 000 28798	△ POWER CORD	01 02:19	52	9965 000 25645	MOTOR, CAPSTAN F2QVB66 SANKYO FO
300	9965 000 26265	△ POWER CORD	05	52 *	9965 000 25645	MOTOR, CAPSTAN F2QVB66 SANKYO FO
806	9965 000 25781	RF CABLE	52 *	9965 000 25645	MOTOR, CAPSTAN F2QVB66 SANKYO FO	
811	9965 000 25782	VIDEO CABLE YEL	52A	9965 000 25660	SUPPORTER, CAPSTAN OTHER - D37	
812	9965 000 25783	AUDIO CABLE WHITE,RED	55	9965 000 25646	GEAR, DRIVE OTHER - D37	
821	9965 000 26260	SCART TO SCART 21 PIN DT_HY_HI	56	9965 000 25647	GEAR, CAM OTHER - D37	
826	9965 000 28799	FILTER (CIRC), EMC	58	9965 000 25648	BRAKE ASSEMBLY, CAPSTAN -D37	
900	9965 000 28800	REMOTE CONTROL DVDR3320V	60	9965 000 25649	LEVER, F/R OTHER - D37	
A00	9965 000 28801	VCR DECK MECH ASSEMBLY	61	9965 000 25650	CLUTCH ASSEMBLY, D37(M)	
A43	9965 000 28802	FRONT PANEL ASSEMBLY	01:02	64	9965 000 25651	GEAR, SECTOR OTHER - D37
A43	9965 000 28846	FRONT PANEL ASSEMBLY	05	76	9965 000 25652	LEVER, SPRING OTHER - D37
A43	9965 000 28849	FRONT PANEL ASSEMBLY	19	77	9965 000 25653	PLATE, SLIDER OTHER - D37
A60	9965 000 28803	RL-05C LOADER (DVDR) MODULE	78	9965 000 25654	LEVER, TENSION OTHER - D37	
			79	9965 000 25655	BASE, TENSION OTHER - D37	
			80	9965 000 25656	LEVER, BRAKE OTHER - D37	
			100	9965 000 25657	PLATE ASSEMBLY, TOP - D37	
VCR MECHANISM PARTS (FOR PAGES 4-28 TO 4-30)						
3	9965 000 25625	HOLDER, FPCB(6CH) - D37C MO				
4	9965 000 25626	CAP, FPCB - D37C MOLD	109	9965 000 25658	OPENER, DOOR OTHER - D37	
8	9965 000 25627	CABLE, FLAT 7PIN 17CM	405	9965 000 28839	SCREW MACHINE,PAN HEAD	
9	9965 000 25628	ARM, T:UP OTHER - D37	406	4822 502 21655	SCREW MACHINE,PAN HEAD SPR W	
11	9965 000 25629	ARM ASSEMBLY, TENSION - D37	409	9965 000 19341	+ 1 D2.6 L5.0 SWRCH18A/FZY TAP	
			410	9965 000 19342	D2.6 L6.8 MSWR3/FZY	
12	9965 000 25630	BASE ASSEMBLY, P2 -D37				
12 *	9965 000 28830	BASE ASSEMBLY	517	9965 000 28840	WASHER,DRAWING	
13	9965 000 25631	BASE ASSEMBLY, P3 - D37	517 *	9965 000 28841	WASHER,DRAWING	
13 *	9965 000 28831	BASE ASSEMBLY	518	9965 000 28842	WASHER,DRAWING	
14	9965 000 25632	BASE ASSEMBLY, P4 - D37	A01	9965 000 25617	DRUM(CIRC) ASSEMBLY, D37-6CH PAL	
			A11	9965 000 25619	GEAR ASSEMBLY, P3 - D37	
15	9965 000 25633	OPENER, LID OTHER - D37				
16	9965 000 28832	BASE ASSEMBLY	A12	9965 000 25620	GEAR ASSEMBLY, P2 - D37	
16 *	9965 000 28833	BASE ASSEMBLY	A21	9965 000 25621	HOLDER ASSEMBLY, CST - D37	
17	9965 000 28834	REEL	A22	9965 000 25622	GEAR ASSEMBLY, RACK F/L - D37	
17 *	9965 000 25635	REEL, S OTHER - D37	A23	9965 000 25623	ARM ASSEMBLY, F/L - D37	
			A24	9965 000 25624	LEVER ASSEMBLY, SWITCH(C) - D37	
21	9965 000 25636	BRAKE ASSEMBLY, T - D37				
22	9965 000 25637	HEAD(CIRC), ST FE HEAD FOR D37	Note:		* ALTERNATIVE PART CODE	
22 *	9965 000 28835	HEAD(CIRC)			Only the parts mentioned in this list are normal service spare parts.	
23	9965 000 25638	BASE, LOADING OTHER - D37				
24	9965 000 25639	ARM ASSEMBLY, IDLER(H)				

## ELECTRICAL PARTS LIST

## VCR MAIN BOARD ASSEMBLY

## MISCELLANEOUS

323	9965 000 25560	CASE ASSEMBLY
BC91	9965 000 18585	BEAD CORE BFS3550R2FD8.R T/P
BC92	9965 000 18585	BEAD CORE BFS3550R2FD8.R T/P
CS501	9965 000 25563	SWITCH MPU12970MLB0
ES501	9965 000 25564	HOLDER ASSY VCR DECK/MECHA END/S
ES502	9965 000 25564	HOLDER ASSY VCR DECK/MECHA END/S
F903	9965 000 18627	CFI06B1H101MF SAMHWA TP 2.5K
F904	9965 000 18627	CFI06B1H101MF SAMHWA TP 2.5K
F905	9965 000 18627	CFI06B1H101MF SAMHWA TP 2.5K
F906	9965 000 18627	CFI06B1H101MF SAMHWA TP 2.5K
JK901	9965 000 25795	DVD/VCR OUT - Y/PR/PB + LR + CO
JK903	9965 000 25796	S-VIDEO OUT (REAR)
LD501	9965 000 25592	HOLDER ASSY, VCR DECK/MECHA END
MS501	9965 000 25594	SWITCH SSS-51MD-3 5VDC 1MA D3
MS501 *	9965 000 25595	SWITCH MMS010802MBO 5VDC 1MA D37
P3D01	9965 000 25801	FLEX SOCKET 9PIN VERT
P3D02	9965 000 25802	FLEX SOCKET 6PIN VERT
P3D03	9965 000 25803	SOCKET GB201-2P-TS-B
PM601	9965 000 25804	SOCKET, TUC-P12P B1 12P
PM602	9965 000 25805	SOCKET, TUC-P05P-B1 5P 2.0MM
PMC01	9965 000 25806	SOCKET JE612-A2T-12A 12P 2.0M
PMD01	9965 000 25807	FLEX SOCKET 15PIN VERT
PMD02	9965 000 25808	FLEX SOCKET 30PIN VERT
PMP01	9965 000 28812	8283/9073 15PIN 240MM SHIELD
RS501	9965 000 25802	KIT-3001A REEL SENSOR
RS502	9965 000 25602	KIT-3001A REEL SENSOR
SC901	9965 000 25603	DOUBLE - SCART DSAM-0341
SW901	9965 000 25811	SLIDE SWITCH - RGB / COMPONENT
TU701	9965 000 25812	TUNER UNIT TADM-M901D
TU701	9965 000 25672	TUNER UNIT TADM-S101D
X301	9965 000 28814	HC-49/SB BUBANG 4.433619MHZ /
X501	9965 000 25815	X'TAL RESONATOR 14.31818MHZ
X502	9965 000 25611	X'TAL 32.768KHZ
X751	9965 000 18660	49U BUBANG 18432000HZ 30PPM 16

## CAPACITORS

C313	9965 000 28804	0.022UF D 100V 5% PE TP5
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## RESISTORS

## COILS &amp; FILTERS

L201	9965 000 25797	INDUCTOR 10UH 10%
L300	9965 000 28805	39UH 5% 4X5 TR5
L302	9965 000 28806	100UH 5% TP 4 X 5 TR5
L303	9965 000 28807	150UH 5% 4X5 TR5
L305	9965 000 28805	39UH 5% 4X5 TR5
L306	9965 000 28806	100UH 5% TP 4 X 5 TR5
L307	9965 000 28808	12UH 10% R 3X5 TR5
L308	9965 000 28806	100UH 5% TP 4 X 5 TR5
L311	9965 000 28806	100UH 5% TP 4 X 5 TR5

L503	9965 000 18641	100M K 6X6 L5 TP
L504	9965 000 18646	10M K 6X6 L5 TP
L505	9965 000 25799	INDUCTOR 12UH
L506	9965 000 25591	INDUCTOR 1UH, .CHIP2012
L507	9965 000 25591	INDUCTOR 1UH, .CHIP2012
L701	9965 000 18641	100M K 6X6 L5 TP
L704	9965 000 18646	10M K 6X6 L5 TP
L705	9965 000 18646	10M K 6X6 L5 TP
L7M1	9965 000 18646	10M K 6X6 L5 TP
L7V1	9965 000 18641	100M K 6X6 L5 TP
L801	9965 000 18641	100M K 6X6 L5 TP
L802	9965 000 18641	100M K 6X6 L5 TP
L901	9965 000 19456	10UH, CHIP2012 CERATECH R/TP
L902	9965 000 19456	10UH, CHIP2012 CERATECH R/TP
L903	9965 000 19456	10UH, CHIP2012 CERATECH R/TP
L904	9965 000 19456	10UH, CHIP2012 CERATECH R/TP
L905	9965 000 19456	10UH, CHIP2012 CERATECH R/TP
L906	9965 000 19456	10UH, CHIP2012 CERATECH R/TP
L907	9965 000 19456	10UH, CHIP2012 CERATECH R/TP
L908	9965 000 19456	10UH, CHIP2012 CERATECH R/TP
L909	9965 000 19456	10UH, CHIP2012 CERATECH R/TP
L910	9965 000 19456	10UH, CHIP2012 CERATECH R/TP
L911	9965 000 18646	10M K 6X6 L5 TP
L912	9965 000 25591	INDUCTOR 1UH, .CHIP2012
L913	9965 000 25591	INDUCTOR 1UH, .CHIP2012

## DIODES

D8C1	9965 000 18686	RL104 R. TP GULF SEMICONDUCTOR
D8C2	9965 000 18686	RL104 R. TP GULF SEMICONDUCTOR
D201	9965 000 18565	RL104F 400V 1A
D901	9965 000 18565	RL104F 400V 1A
D902	9965 000 18565	RL104F 400V 1A
D903	9965 000 18565	RL104F 400V 1A
D904	9965 000 18565	RL104F 400V 1A
D905	9965 000 18565	RL104F 400V 1A
D906	9965 000 18565	RL104F 400V 1A
ZD801	9965 000 25616	ZENER Z02W7.5V KEC R/TP SOT23 25
ZD802	9965 000 25616	ZENER Z02W7.5V KEC R/TP SOT23 25
ZD901	9965 000 25616	ZENER Z02W7.5V KEC R/TP SOT23 25
ZD902	9965 000 25616	ZENER Z02W7.5V KEC R/TP SOT23 25
ZD903	9965 000 25616	ZENER Z02W7.5V KEC R/TP SOT23 25
ZD904	9965 000 25616	ZENER Z02W7.5V KEC R/TP SOT23 25
ZD905	9965 000 25616	ZENER Z02W7.5V KEC R/TP SOT23 25
ZD906	9965 000 25616	ZENER Z02W7.5V KEC R/TP SOT23 25
ZD907	9965 000 25616	ZENER Z02W7.5V KEC R/TP SOT23 25
ZD908	9965 000 25616	ZENER Z02W7.5V KEC R/TP SOT23 25
ZD925	9965 000 25616	ZENER Z02W7.5V KEC R/TP SOT23 25
ZD926	9965 000 25616	ZENER Z02W7.5V KEC R/TP SOT23 25
ZD927	9965 000 25616	ZENER Z02W7.5V KEC R/TP SOT23 25
ZD928	9965 000 25616	ZENER Z02W7.5V KEC R/TP SOT23 25

## ELECTRICAL PARTS LIST

## TRANSISTORS

Q301	9965 000 18651	2SC5344Y TP
Q301 *	9965 000 25599	KTC3203 KEC TP TO92 50V 150MA
Q302	9965 000 25598	STB1277LY-AT TP TO-9 AUK KOREA
Q302 *	9965 000 25597	KSA928A-Y TO-92L TP SAMSUNG TO
Q302 *	9965 000 25810	KTA1273-TP-Y (KTA966A)KEC
Q303	9965 000 28811	DTC124EK TP ROHM KOREA SOT23 3
Q303 *	9965 000 28813	AUK KOREA SRC1203S R/TP SOT23
Q303 *	9965 000 16624	CHIP TRANSISTOR KRC103S RTK
Q305	9965 000 25809	CHIP KTC3875S-GR-T1(ALG) KEC
Q306	9965 000 25809	CHIP KTC3875S-GR-T1(ALG) KEC
Q307	9965 000 26162	KRA103S-T1
Q310	9965 000 16622	CHIP TRANSISTOR KTA1504GR-RTK
Q501	9965 000 25809	CHIP KTC3875S-GR-T1(ALG) KEC
Q503	9965 000 25810	KTA1273-TP-Y (KTA966A)KEC
Q504	9965 000 16622	CHIP TRANSISTOR KTA1504GR-RTK
Q505	9965 000 16622	CHIP TRANSISTOR KTA1504GR-RTK
Q506	9965 000 25809	CHIP KTC3875S-GR-T1(ALG) KEC
Q514	9965 000 16624	CHIP TRANSISTOR KRC103S RTK
Q515	9965 000 16624	CHIP TRANSISTOR KRC103S RTK
Q701	9965 000 16624	CHIP TRANSISTOR KRC103S RTK
Q704	9965 000 25810	KTA1273-TP-Y (KTA966A)KEC
Q751	9965 000 25809	CHIP KTC3875S-GR-T1(ALG) KEC :19 only
Q752	9965 000 16624	CHIP TRANSISTOR KRC103S RTK :19 only
Q8C1	9965 000 16622	CHIP TRANSISTOR KTA1504GR-RTK
Q901	9965 000 16622	CHIP TRANSISTOR KTA1504GR-RTK
Q902	9965 000 25809	CHIP KTC3875S-GR-T1(ALG) KEC
Q903	9965 000 25809	CHIP KTC3875S-GR-T1(ALG) KEC
Q904	9965 000 16624	CHIP TRANSISTOR KRC103S RTK
Q905	9965 000 16622	CHIP TRANSISTOR KTA1504GR-RTK
Q906	9965 000 16624	CHIP TRANSISTOR KRC103S RTK
Q907	9965 000 16622	CHIP TRANSISTOR KTA1504GR-RTK
Q910	9965 000 25809	CHIP KTC3875S-GR-T1(ALG) KEC
Q911	9965 000 25809	CHIP KTC3875S-GR-T1(ALG) KEC
Q912	9965 000 25809	CHIP KTC3875S-GR-T1(ALG) KEC

## INTEGRATED CIRCUITS

IC201	9965 000 25670	LA70100M-TRM SANYO	02/19 only
IC301	9965 000 28809	HA118725AF-E PB-FREE HITACHI 1	
IC501	9965 000 28810	MM101D101F LJ MATSUSHITA 100PI	
IC503	9965 000 18632	CAT24W16P 8P DIP ST 16K SERIAL	
IC504	9965 000 18633	KIA7031P 3P 3.1V RESET(TAPING)	
IC505	9965 000 18634	KIA7042P	
IC751	9965 000 14760	AUD UP MSP3417G-QG-BB-V3	
IC7V1	9965 000 25582	SDA5650X GEG MICRONAS 20PIN SO	
IC801	9352 631 46557	IC SM TDA9605H/N2	
IC802	9965 000 25583	MM1443XJBE MITSUMI 34PIN SSOP	
IC901	9965 000 18573	MM1623XFB MITSUMI 28PIN SOP R	

Note: \* ALTERNATIVE PART CODE

Only the parts mentioned in this list are normal service spare parts.

## FRONT JACK PC BOARD

## MISCELLANEOUS

JK761	9965 000 25958	S-VIDEO SOCKET
JK762	9965 000 26261	CINCH SOCKET WHITE
JK763	9965 000 26262	CINCH SOCKET RED
JK764	9965 000 26263	CINCH SOCKET YELLOW
JK765	9965 000 28829	DV-IN SOCKET

## COILS &amp; FILTERS

F701	9965 000 18585	BEAD CORE BFS3550R2FD8,R T/P
F702	9965 000 18585	BEAD CORE BFS3550R2FD8,R T/P
F703	9965 000 18585	BEAD CORE BFS3550R2FD8,R T/P
F704	9965 000 18585	BEAD CORE BFS3550R2FD8,R T/P
L701	9965 000 18585	BEAD CORE BFS3550R2FD8,R T/P
L702	9965 000 18585	BEAD CORE BFS3550R2FD8,R T/P
L703	9965 000 18585	BEAD CORE BFS3550R2FD8,R T/P
L704	9965 000 18648	100M K 2.3X3.4 L5 TP
L705	9965 000 18648	100M K 2.3X3.4 L5 TP

## TIMER (DISPLAY) + KEY PC BOARDS

## MISCELLANEOUS

DIG601	9965 000 25949	FTD DISPLAY HN-V12SM79T
P6M01	9965 000 25953	CONN. PLUG TUC-P12X-B1 12P
P6M03	9965 000 25954	CONN. PLUG TUC-P05X-B1 5PIN
RC601	9965 000 25955	REM RECEIVER TSOP24385B1
RC601 *	9965 000 25956	REM RECEIVER TSOP1838RF1
SW601	9965 000 19257	THVV502GAA POSTECH DC 12 V 5-
SW601 *	9965 000 25957	TACT SWITCH SKQNOED 12V 50MA
SW602	9965 000 19257	THVV502GAA POSTECH DC 12 V 5-
SW602 *	9965 000 25957	TACT SWITCH SKQNOED 12V 50MA
SW603	9965 000 19257	THVV502GAA POSTECH DC 12 V 5-
SW603 *	9965 000 25957	TACT SWITCH SKQNOED 12V 50MA
SW604	9965 000 19257	THVV502GAA POSTECH DC 12 V 5-
SW604 *	9965 000 25957	TACT SWITCH SKQNOED 12V 50MA
SW605	9965 000 19257	THVV502GAA POSTECH DC 12 V 5-
SW605 *	9965 000 25957	TACT SWITCH SKQNOED 12V 50MA
SW606	9965 000 19257	THVV502GAA POSTECH DC 12 V 5-
SW606 *	9965 000 25957	TACT SWITCH SKQNOED 12V 50MA
SW607	9965 000 19257	THVV502GAA POSTECH DC 12 V 5-
SW607 *	9965 000 25957	TACT SWITCH SKQNOED 12V 50MA
SW608	9965 000 19257	THVV502GAA POSTECH DC 12 V 5-
SW610	9965 000 19257	THVV502GAA POSTECH DC 12 V 5-
SW610 *	9965 000 25957	TACT SWITCH SKQNOED 12V 50MA
SW611	9965 000 19257	THVV502GAA POSTECH DC 12 V 5-
SW611 *	9965 000 25957	TACT SWITCH SKQNOED 12V 50MA
SW612	9965 000 19257	THVV502GAA POSTECH DC 12 V 5-
SW612 *	9965 000 25957	TACT SWITCH SKQNOED 12V 50MA
SW613	9965 000 19257	THVV502GAA POSTECH DC 12 V 5-
SW613 *	9965 000 25957	TACT SWITCH SKQNOED 12V 50MA
SW614	9965 000 19257	THVV502GAA POSTECH DC 12 V 5-

## ELECTRICAL PARTS LIST

## MISCELLANEOUS

SW614 *	9965 000 25957	TACT SWITCH SKQNOED 12V 50MA
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## CAPACITORS

C602	9965 000 28828	TANTALUM CAP 220UF 10V 20%
C602 *	9965 000 28827	TANTALUM CAP 220UF 10V 20%

## RESISTORS

R626	9965 000 25921	INDUCTOR, CHIP HB-1M1608-102JT
R607	9965 000 25921	INDUCTOR, CHIP HB-1M1608-102JT
R608	9965 000 25921	INDUCTOR, CHIP HB-1M1608-102JT
R609	9965 000 25921	INDUCTOR, CHIP HB-1M1608-102JT

## COIL &amp; FILTERS

L601	9965 000 19251	820UH 5% 4X5 TR5
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## DIODES

LED601	9965 000 25951	SA3417 TP RED
LED602	9965 000 25952	SY3517 BK AMBER
LED603	9965 000 25952	SY3517 BK AMBER
LED604	9965 000 25952	SY3517 BK AMBER
LED605	9965 000 25952	SY3517 BK AMBER
LED606	9965 000 25951	SA3417 TP RED
LED606 *	9965 000 26158	LED DL-11S2RNS RED
LED607	9965 000 25951	SA3417 TP RED
LED607 *	9965 000 26158	LED DL-11S2RNS RED

## TRANSISTORS &amp; INTEGRATED CIRCUITS

IC601	9965 000 25950	PT6315 PTC 44 LQFP TRAY VFD DR
Q601	9965 000 25809	CHIP KTC3875S-GR-T1(ALG) KEC
Q604	9965 000 25809	CHIP KTC3875S-GR-T1(ALG) KEC

Note:

\* ALTERNATIVE PART CODE

Only the parts mentioned in this list are normal service spare parts.

## VDR (DIGITAL) BOARD

## MISCELLANEOUS

CON401	9965 000 25920	FLEX SOCKET 40PIN VERT
PN301	9965 000 25941	CONN SOCKET 15PIN VERT
PN302	9965 000 25941	CONN SOCKET 15PIN VERT
PN303	9965 000 25942	FLEX SOCKET 15PIN VERT
PN304	9965 000 25943	FLEX SOCKET 30PIN VERT
X101	9965 000 25945	CRYSTAL RESONATOR 13.5 MHZ
X501	9965 000 25946	CRYSTAL RESONATOR 14.31818MHZ
X601	9965 000 25947	CRYSTAL RESONATOR 24.576MHZ

## CAPACITORS

C107	9965 000 25907	TANTALUM CAP 47UF 10V 20%
C109	9965 000 25908	TANTALUM CAP 10UF 10V
C121	9965 000 25908	TANTALUM CAP 10UF 10V
C123	9965 000 25908	TANTALUM CAP 10UF 10V
C135	9965 000 25908	TANTALUM CAP 10UF 10V
C136	9965 000 25908	TANTALUM CAP 10UF 10V
C149	9965 000 25908	TANTALUM CAP 10UF 10V
C162	9965 000 25908	TANTALUM CAP 10UF 10V
C303	9965 000 25910	TANTALUM CAP 330UF 6.3V 20%
C305	9965 000 25911	ELCAP 220UF 6.3V
C306	9965 000 25912	TANTALUM CAP 122UF 10V
C309	9965 000 25911	ELCAP 220UF 6.3V
C311	9965 000 25911	ELCAP 220UF 6.3V
C312	9965 000 25911	ELCAP 220UF 6.3V
C313	9965 000 25911	ELCAP 220UF 6.3V
C318	9965 000 25911	ELCAP 220UF 6.3V
C320	9965 000 25911	ELCAP 220UF 6.3V
C403	9965 000 25912	TANTALUM CAP 22UF 10V
C504	9965 000 25913	ELCAP 100UF 16V
C507	9965 000 25914	ELCAP 22UF 16V
C508	9965 000 25915	ELCAP 10UF 16V
C509	9965 000 25915	ELCAP 10UF 16V
C510	9965 000 25915	ELCAP 10UF 16V
C519	9965 000 25916	TANTALUM CAP 10UF 16V 20%
C535	9965 000 25916	TANTALUM CAP 10UF 16V 20%
C537	9965 000 25916	TANTALUM CAP 10UF 16V 20%
C628	9965 000 25917	TANTALUM CAP 1UF 16V
C629	9965 000 25917	TANTALUM CAP 1UF 16V
C630	9965 000 25912	TANTALUM CAP 22UF 10V
C803	9965 000 25918	ELCAP 47UF 16V
C805	9965 000 25914	ELCAP 22UF 16V
C808	9965 000 25914	ELCAP 22UF 16V
C810	9965 000 25914	ELCAP 22UF 16V
C813	9965 000 25915	ELCAP 10UF 16V
C815	9965 000 25918	ELCAP 47UF 16V
C820	9965 000 25915	ELCAP 10UF 16V
C822	9965 000 25915	ELCAP 10UF 16V
C824	9965 000 25915	ELCAP 10UF 16V
C828	9965 000 25918	ELCAP 47UF 16V
C829	9965 000 25915	ELCAP 10UF 16V

## ELECTRICAL PARTS LIST

## CAPACITORS

C831	9965 000 25915	ELCAP 10UF 16V
C833	9965 000 25918	ELCAP 47UF 16V
C835	9965 000 28815	3.3UF 50V 20% 85STD (CYL) R/TP
C836	9965 000 25915	ELCAP 10UF 16V
C837	9965 000 25918	ELCAP 47UF 16V
C840	9965 000 25914	ELCAP 22UF 16V
C841	9965 000 25914	ELCAP 22UF 16V
C845	9965 000 25914	ELCAP 22UF 16V
C847	9965 000 25918	ELCAP 47UF 16V
C849	9965 000 25918	ELCAP 47UF 16V
C899	9965 000 25915	ELCAP 10UF 16V
C1201	9965 000 25843	TANTALUM CAP 10UF 6.3V 20%
C1208	9965 000 25843	TANTALUM CAP 10UF 6.3V 20%
C1262	9965 000 25843	TANTALUM CAP 10UF 6.3V 20%
C1272	9965 000 25843	TANTALUM CAP 10UF 6.3V 20%
C1282	9965 000 25910	TANTALUM CAP 330UF 6.3V 20%
C1282	9965 000 25909	TANTALUM CAP 330UF 6.3V 20%
C1287	9965 000 25910	TANTALUM CAP 330UF 6.3V 20%
C1287	9965 000 25909	TANTALUM CAP 330UF 6.3V 20%
C1288	9965 000 25910	TANTALUM CAP 330UF 6.3V 20%
C1288	9965 000 25909	TANTALUM CAP 330UF 6.3V 20%
C1289	9965 000 25910	TANTALUM CAP 330UF 6.3V 20%
C1289	9965 000 25909	TANTALUM CAP 330UF 6.3V 20%
C1291	9965 000 25839	TANTALUM CAP 22UF 16V 20%
C1293	9965 000 25909	TANTALUM CAP 330UF 6.3V 20%
C1293	9965 000 25910	TANTALUM CAP 330UF 6.3V 20%
C1295	9965 000 25910	TANTALUM CAP 330UF 6.3V 20%
C1295	9965 000 25909	TANTALUM CAP 330UF 6.3V 20%
C5108	9965 000 25916	TANTALUM CAP 10UF 16V 20%
C5109	9965 000 25916	TANTALUM CAP 10UF 16V 20%
C5110	9965 000 25916	TANTALUM CAP 10UF 16V 20%

## RESISTORS

R307	9965 000 25921	INDUCTOR, CHIP HB-1M1608-102JT
R308	9965 000 25921	INDUCTOR, CHIP HB-1M1608-102JT
R506	9965 000 25921	INDUCTOR, CHIP HB-1M1608-102JT

## COILS &amp; FILTERS

FB801	9965 000 18575	HB-1M2012-102JT CERATECH TP
FB802	9965 000 18575	HB-1M2012-102JT CERATECH TP
FB803	9965 000 18575	HB-1M2012-102JT CERATECH TP
FB804	9965 000 18575	HB-1M2012-102JT CERATECH TP
FB805	9965 000 18575	HB-1M2012-102JT CERATECH TP
FB821	9965 000 18575	HB-1M2012-102JT CERATECH TP
FB822	9965 000 18575	HB-1M2012-102JT CERATECH TP
FB823	9965 000 18575	HB-1M2012-102JT CERATECH TP
FB824	9965 000 18575	HB-1M2012-102JT CERATECH TP
FB825	9965 000 18575	HB-1M2012-102JT CERATECH TP
FB826	9965 000 18575	HB-1M2012-102JT CERATECH TP
FL503	9965 000 25921	INDUCTOR, CHIP HB-1M1608-102JT
FL504	9965 000 25921	INDUCTOR, CHIP HB-1M1608-102JT

FL505	9965 000 25921	INDUCTOR, CHIP HB-1M1608-102JT
FL506	9965 000 25921	INDUCTOR, CHIP HB-1M1608-102JT
FL507	9965 000 25921	INDUCTOR, CHIP HB-1M1608-102JT
L102	9965 000 18575	HB-1M2012-102JT CERATECH TP
L103	9965 000 18575	HB-1M2012-102JT CERATECH TP
L104	9965 000 18575	HB-1M2012-102JT CERATECH TP
L105	9965 000 18575	HB-1M2012-102JT CERATECH TP
L106	9965 000 18575	HB-1M2012-102JT CERATECH TP
L107	9965 000 18575	HB-1M2012-102JT CERATECH TP
L302	9965 000 25939	BEAD C,HH-1H4532-121JT
L303	9965 000 25939	BEAD C,HH-1H4532-121JT
L304	9965 000 25939	BEAD C,HH-1H4532-121JT
L305	9965 000 25939	BEAD C,HH-1H4532-121JT
L306	9965 000 25939	BEAD C,HH-1H4532-121JT
L307	9965 000 25939	BEAD C,HH-1H4532-121JT
L308	9965 000 25939	BEAD C,HH-1H4532-121JT
L501	9965 000 18575	HB-1M2012-102JT CERATECH TP
L502	9965 000 18575	HB-1M2012-102JT CERATECH TP
L503	9965 000 18575	HB-1M2012-102JT CERATECH TP
L504	9965 000 18575	HB-1M2012-102JT CERATECH TP
L606	9965 000 18575	HB-1M2012-102JT CERATECH TP
L607	9965 000 18575	HB-1M2012-102JT CERATECH TP
L608	9965 000 18575	HB-1M2012-102JT CERATECH TP
L609	9965 000 28824	HB-1S1608-121 CERATECH TP
L610	9965 000 28824	HB-1S1608-121 CERATECH TP
L611	9965 000 28824	HB-1S1608-121 CERATECH TP
L612	9965 000 28824	HB-1S1608-121 CERATECH TP
L1201	9965 000 25939	BEAD C,HH-1H4532-121JT
L1202	9965 000 18575	HB-1M2012-102JT CERATECH TP
L1203	9965 000 25939	BEAD C,HH-1H4532-121JT
L1204	9965 000 25939	BEAD C,HH-1H4532-121JT
L5101	9965 000 18575	HB-1M2012-102JT CERATECH TP
L5102	9965 000 18575	HB-1M2012-102JT CERATECH TP
L5103	9965 000 18575	HB-1M2012-102JT CERATECH TP

## DIODES

D101	4822 130 83649	1SS355
D102	4822 130 83649	1SS355

## TRANSISTORS

Q402	9965 000 16624	CHIP TRANSISTOR KRC103S RTK
Q403	9965 000 16624	CHIP TRANSISTOR KRC103S RTK
Q404	9965 000 16624	CHIP TRANSISTOR KRC103S RTK
Q807	9965 000 25809	CHIP KTC3875S-GR-T1(ALG) KEC
Q808	9965 000 25809	CHIP KTC3875S-GR-T1(ALG) KEC

## INTEGRATED CIRCUITS

IC101	9965 000 28816	DMN-8602 B0 LEAD FREE LSI LOGI
IC301A	9965 000 28819	FLASH IC W/SW PROGRAM
IC302	9965 000 25927	74VHC123 PHILIPS 14PIN.TSSOP R
IC304	9965 000 25928	5524A60X51-SC70 8P SOP TP EEP R
IC402	9965 000 25929	74LVC08APW PHILIPS 14PIN TSSOP

## ELECTRICAL PARTS LIST

## INTEGRATED CIRCUITS

IC406	9965 000 25930	74LVT16373A DGG PHILIPS 48PIN
IC409	9965 000 25931	74LVC04APW PHILIPS 14PIN TSSOP
IC501	9965 000 25932	NJM2274R JRC VSP8 R/TP LOW POW
IC502	9965 000 28820	L2146 LSI LOGIC 80PIN.TQFP TRA
IC601	9965 000 25935	TSB41AB1PHP TEXAS INSTRUMENT 4
IC802	9965 000 28822	CS4351-CZZR CIRRUS LOGIC 20PIN
IC803	9965 000 25936	MC33202DR2 ON SEMI 8PIN SOP R/
IC804	9965 000 28823	CS5340-CZZR CIRRUS LOGIC 16PIN
IC805	9965 000 25936	MC33202DR2 ON SEMI 8PIN SOP R/
IC1201	9965 000 28817	G2995F1UF GMT 8PIN.SOP-8L R/TP
IC1202	9965 000 25924	HYB25D256160CE-6 INFINEON 66PI
IC1202	9965 000 25925	HY5DU561622C HYNIX 66PIN.TSOP
IC1202	9965 000 28818	HY5DU561622DT-J HYNIX 66PIN.TS
IC1203	9965 000 25924	HYB25D256160CE-6 INFINEON 66PI
IC1203	9965 000 28818	HY5DU561622DT-J HYNIX 66PIN.TS
IC1203	9965 000 25925	HY5DU561622C HYNIX 66PIN.TSOP
IC5101	9965 000 28821	SAAT120H PHILIPS 44 QFP TRAY V

Note: \* ALTERNATIVE PART CODE

Only the parts mentioned in this list are normal service spare parts.

## POWER (SMPS) BOARD MODULE

## MISCELLANEOUS

BC101	9965 000 25876	BEAD CORE BFD3514R2F.R T P
BC102	9965 000 25876	BEAD CORE BFD3514R2F.R T P
BD101	9965 000 25877	GBL08 VISHAY BK GBL 800V 4A 20
F101	4822 070 31602	△ FUSE 1.6A 250V 2X20
PW101	9965 000 25897	CONN SOCKET 2PIN, AC IN
T101	9965 000 25900	△ EER2828 COMPLEX MODEL SOOJUNG
T102	9965 000 25901	△ EER2828 COMPLEX MODEL SOOJUNG
TH01	9965 000 25902	THERMISTOR, PTC 4.0OHM 1/5
V101	9965 000 19235	△ SVC681D-10A SAMHWA 4 O CUT

## CAPACITORS

C101	9965 000 28825	△ MPX104K 275VAC BULK ETR
C101 *	9965 000 25878	△ PCX2 275V 0.1UF.M (PILKO)
C101 *	9965 000 18666	△ 435D SUNIL ELECTRONICS 0.1UF/2
C102	9965 000 28825	△ MPX104K 275VAC BULK ETR
C102 *	9965 000 25878	△ PCX2 275V 0.1UF.M (PILKO)
C102 *	9965 000 18666	△ 435D SUNIL ELECTRONICS 0.1UF/2
C103	9965 000 25879	ELCAP 150UF 400V 20%
C105	9965 000 18669	0.01UF D 630V K PE NI TP
C106	9965 000 25551	CAP HIGH-VOL 68PF 1KV
C110	9965 000 18672	△ 1000PF 400V M E(Z5U) R
C111	9965 000 18672	△ 1000PF 400V M E(Z5U) R
C115	9965 000 18669	0.01UF D 630V K PE NI TP
C116	9965 000 25551	CAP HIGH-VOL 68PF 1KV
C122	4822 124 40201	1000UF20% 16V
C123	9965 000 25552	ELCAP 2200UF 16V 20% BK7.5 FL
C125	4822 124 40184	1000UF20% 10V
C126	9965 000 25552	ELCAP 2200UF 16V 20% BK7.5 FL
C129	9965 000 25552	ELCAP 2200UF 16V 20% BK7.5 FL
C139	9965 000 25880	1000UF KMG 25V 20% BULK FL

## RESISTORS

R100	9965 000 19226	1.5M OHM 1/2 W 5.00% MF10
R103	9965 000 19228	56K OHM 2 W 5.00% TR
R112	9965 000 19228	56K OHM 2 W 5.00% TR
R115	9965 000 19228	56K OHM 2 W 5.00% TR
R155	9965 000 25899	56 OHM 1 W 5.00% TR

## COILS &amp; FILTERS

L102	9965 000 25895	△ SQ2626 SAMWAH TECOM BK SQ2424
L121	9965 000 25588	CHOKE COIL TDK 22UH(±633-088G
L121 *	9965 000 19212	CHOCK(22MH) 5MM TOKO TP
L122	9965 000 25588	CHOKE COIL TDK 22UH(±633-088G
L122 *	9965 000 19212	CHOCK(22MH) 5MM TOKO TP
L123	9965 000 25896	BAR CHOKE COIL 2 PIN 10 UHCCAR
L125	9965 000 18641	100M K 6X6 L5 TP
L127	9965 000 19212	CHOCK(22MH) 5MM TOKO TP

## DIODES

D101	9965 000 18682	ERA22-10 KFLB,TP ,R T/P,FUJI
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## ELECTRICAL PARTS LIST

## DIODES

D102	9965 000 18683	EU01W(R-FORM) TP SANKEN
D103	9965 000 18682	ERA22-10 KFLB,TP ,R T/P,FUJI
D104	9965 000 18683	EU01W(R-FORM) TP SANKEN
D121	9965 000 25882	S8360-24A GULF BK DO201AD 60V
D121 *	9965 000 25881	D356M SHINDENGEN BK AX14 60V 1
D122	9965 000 18687	B10A45V1 BK KEC TO220 45V 10A
D123	9965 000 18687	B10A45V1 BK KEC TO220 45V 10A
D124	9965 000 25883	B5A60VI, 4MM CUTTING KEC ST T
D124 *	9965 000 28826	FSQ05A60 4MM CUTTING NIHON INT
D125	9965 000 18684	HER302 BK RECTRON DO201AD 100V
D125 *	9965 000 25554	DIODE RU4YX BK
D126	9965 000 18684	HER302 BK RECTRON DO201AD 100V
D126 *	9965 000 25554	DIODE RU4YX BK
D127	9965 000 18565	RL104F TP RECTRON NON 400V 1A
D128	9965 000 18683	EU01W(R-FORM) TP SANKEN
D129	9965 000 18565	RL104F TP RECTRON NON 400V 1A
D130	9965 000 18683	EU01W(R-FORM) TP SANKEN
D132	9965 000 18686	RL104 R. TP GULF SEMICONDUCTOR
D133	9965 000 18686	RL104 R. TP GULF SEMICONDUCTOR
D134	4822 130 32778	1SS133
D151	9965 000 18686	RL104 R. TP GULF SEMICONDUCTOR
D155	9965 000 18686	RL104 R. TP GULF SEMICONDUCTOR
ZD101	9965 000 25559	ZENER UZ-22BSB 26MM
ZD101 *	9965 000 25903	MTZ22B T-77 TP ROHM
ZD102	9965 000 25559	ZENER UZ-22BSB 26MM
ZD102 *	9965 000 25903	MTZ22B T-77 TP ROHM
ZD151	9965 000 19243	UZ-3.3BSB 26MM TP PYUNG CHANG
ZD151 *	9965 000 25906	MTZ3.3B.T-77(26MMTP) TP ROHM
ZD151 *	9965 000 25905	MTZJ3.3B TP ROHM-K DO34 0.5W 3
ZD151 *	9965 000 25904	GDZJ3.3B TP GRANDE DO34 0.5W 3
ZD152	9965 000 25613	ZENER UZ-13BSA 26MM
ZD153	9965 000 19244	UZ-30BSC 26MM PYUNG CHANG TP D

## TRANSISTORS

Q120	4822 130 63857	KTD1414
Q121	9965 000 19214	SRA2203 TP AUK TO92 22K,22K
Q122	9965 000 19224	2SC5343-L TP AUK TO92
Q122 *	4822 130 41319	2SC1815BL
Q123	9965 000 19225	KTA1268-BL TP KEC
Q124	9965 000 25810	KTA1273-TP-Y (KTA966A)KEC
Q125	4822 130 41319	2SC1815BL
Q125 *	9965 000 19224	2SC5343-L TP AUK TO92
Q126	4822 130 41306	2SC1815GR

## INTEGRATED CIRCUITS

IC101	9965 000 25555	IC FSDL0365RN 8PIN,DIP
IC102	9965 000 18689	Δ LTV-817B,PHOTO COUPLER(LITEON)
IC102 *	9965 000 25884	Δ PC123YN2 SHARP PHOTOCOUPLER
IC103	4822 209 12767	KIA431
IC104	9965 000 25555	IC FSDL0365RN 8PIN,DIP
IC105	9965 000 18689	Δ LTV-817B,PHOTO COUPLER(LITEON)
IC105 *	9965 000 25884	Δ PC123YN2 SHARP PHOTOCOUPLER

IC106	4822 209 12767	KIA431
IC151	9965 000 25887	KIA278R05PI-CU KEC 4PIN.TO220I
IC151 *	9965 000 25886	KA278R05TSTU FAIRCHILD 4PIN.TO
IC152	9965 000 25888	KIA78R25PICU KEC 4PIN.TO-220IS
IC152 *	9965 000 25889	G9125 GMT 4PIN.TO 220F-4L ST 1
IC154	9965 000 25890	G9233 GMT 4PIN. TO 220F-4L ST
IC154 *	9965 000 25891	KA278R33TSTU FAIRCHILD 4PIN TO
IC154 *	9965 000 19210	KIA278R33PI-CU KEC 4PIN TO-220
IC157	9965 000 25893	KIA278R12PI-CU KEC 4PIN.TO220I
IC157 *	9965 000 25892	KA278R12TSTU FAIRCHILD 4P TO-2
IC160	9965 000 25894	PQ070VK02LZH SHARP 5PIN.DIP ST

Note: \* Alternative parts

Only the parts mentioned in this list are normal service spare parts.